BULLETIN No. 7.

U. S. DEPARTMENT OF AGRICULTURE.

DIVISION OF POMOLOGY.

THE FRUIT INDUSTRY,

AND

SUBSTITUTION OF DOMESTIC FOR FOREIGN-GROWN FRUITS,

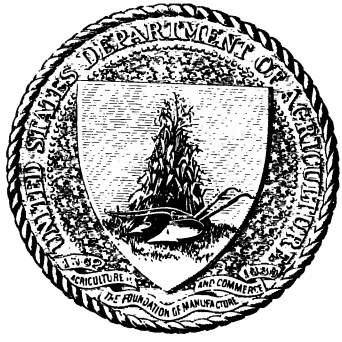
WITH

HISTORICAL AND DESCRIPTIVE NOTES ON TEN VARIETIES OF APPLE SUITABLE FOR THE EXPORT TRADE.

BY

WILLIAM A. TAYLOR,

ASSISTANT POMOLOGIST.



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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
DIVISION OF POMOLOGY,
Washington, D. C., June 4, 1898.

SIR: I have the honor to recommend that the article entitled "The fruit industry, and substitution of domestic for foreign-grown fruits," contributed by Mr. William A. Taylor, assistant pomologist, for the Yearbook for 1897, be reprinted with the addition of certain tables and discussion of fruit exports which were not included in the Yearbook article, and with "Historical and descriptive notes on ten varieties of the apple suitable for the export trade," as Bulletin No. 7 of this Division. It contains information that has never before been brought together in the form in which it appears, and for which there are frequent inquiries. Moreover, the subject-matter is of such a character as to closely connect it with the work of this office, and its publication in bulletin form will preserve it in our regular series of publications, where it properly belongs.

Very respectfully,

G. B. BRACKETT,
Pomologist.

Hon. JAMES WILSON,
Secretary.

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ILLUSTRATIONS.

[Reprint from Yearbook of Department of Agriculture for 1897.]

THE FRUIT INDUSTRY, AND SUBSTITUTION OF DOMESTIC FOR FOREIGN-GROWN FRUITS.

By WILLIAM A. TAYLOR,
Assistant Pomologist, Division of Pomology.

INTRODUCTION.

The fruit industry, considered from the commercial standpoint, is of recent development in the United States. The colonists of the Atlantic Slope and the Mississippi Valley found a great variety and abundant supply of wild fruits and nuts in the forests. Those who came from England and other North European countries found indigenous representatives of most of their familiar fruits and nuts about their new homes, together with many which were new to them. They had but to gather of the abundance which surrounded them in summer and devise means for storing it for winter use. The pioneers of the lower Pacific Coast, on the contrary, found few attractive indigenous fruits, and were dependent upon such as they introduced and cultivated for their fruit supply, which was, therefore, from an early day, chiefly exotic.

FRUITS FOUND AND USED BY THE EARLY COLONISTS.

The chronicler of the expedition sent out by Raleigh to explore in the vicinity of Hatteras said of the grapes observed there that he had visited those parts of Europe in which this fruit was most abundant, and that the difference in quantity in favor of Roanoke was quite incredible.

Ralph Lane, in reporting his observations in 1585–86, pronounced the grapes of Virginia to be larger than those of France, Spain, or Italy.

John Smith found "Chestnuts whose wild fruit equalize the best in France, Spaine, Germany, or Italy to their tast[e]s that had tasted them all." He early learned to discriminate between the green and the ripe persimmon, for he states: "Plumbs there are of three sorts. The red and white are like our hedge plumbs; but the other, which they call Putchamins grow as high as Palmeta. The fruit is like a medler; it is first green, then yellow, and red when it is ripe; if it be not ripe it will draw a man's mouth awrie with much torment; but when it is ripe it is as delicious as an Apricot." He mentions also chinquapins, cherries, crab apples, and grapes, of which last named the colonists made "neere 20 gallons of wine, which was neere as good as your French Brittish wine." He describes at length the Indian methods of drying nuts and persimmons for the winter supply and of preparing them for food, and mentions among other summer fruits

"strawberries which ripen in April" and "Mulberries which ripen in May and June;" he also mentions gooseberries and raspberries as abundant.

The New England colonists made similar reports. In the words of one who was at Plymouth in 1622, "The chestnut, hazlenut, beechnut, butternut, and shagbark yielded contributions to the store of food laid up for winter. Wild cherries, mulberries and plums enlarged the variety of the summer's diet. Wild berries, as the strawberry, the gooseberry, the raspberry, the whortleberry, the cranberry, grew in plenty in the meadow and champaign lands. Vines bearing grapes of tolerable flavor flourished along the streams." Rev. Francis Higginson, writing from the Massachusetts colony in 1629, says: "Excellent vines are here, up and down in the woods. Our governor hath already planted a vineyard with great hopes of encrease; also mulberries, plums, raspberries, corrance, chestnuts, filberts, walnuts, smalnuts, hurtleberries, and hawes of white thorne, neer as good as our cherries in England, they grow in plentie here." William Wood, who came in 1629, reports, "There is likewise Strawberries in abundance, verie large ones, some being two inches about; one may gather halfe a bushell in a forenoone. In other seasons there be Gooseberries, Billberries, Resberries, Treacleberries, Hurtleberries, Currants; which being dried in the Sunne are little inferior to those that our Grocers sell in England." He seems to have been a man of discriminating taste, for, unlike other writers of the period, he tempered his praise of some with condemnation of others, as in the following lines: "The Cherrie trees yield great store of Cherries which grow on clusters like grapes; they be much smaller than our English cherry, nothing neare so good if they be not fully ripe, they so furre the mouth that the tongue will cleave to the roofe, and the throat wax hoarse with swallowing those red Bullies (as I may call them), being little better in taste. English ordering may bring them to be an *English* cherry but yet they are as wilde as the *Indians*. The Plummes of the Countrey be better for Plumbs than the Cherries be for Cherries; they be black and yellow about the bignesse of a Damson, of a reasonable good taste. The white thorne affords hawes as big as an English Cherrie which is esteemed above a Cherrie for his goodness and pleasantnesse to the taste." In his account, "New England's prospect," we find that comparisons of latitude and climate were being made with a view to determine the possibilities of domestic wine production, for he says "vines afford great store of grapes which are very bigge, both for the grape and Cluster, sweet and good; These be of two sorts, red and white, there is likewise a smaller kinde of grape which groweth in the Islands, which is sooner ripe and more delectable; so that there is no knowne reason why as good wine may not be made in those parts as well as in *Burdenaux* in *France*, being under the same degree." * * *

Roger Williams found the strawberry "the wonder of all the fruits growing naturally in these parts. In some places where the natives have planted I have many times seen as many as would fill a good ship within a few miles compass."

William Penn, writing in 1683, mentioned chestnuts, walnuts, plums, strawberries, cranberries, whortleberries, and grapes as growing naturally in the woods, and questioned whether it was best to attempt to improve the fruits of the country, especially the grapes, by the care and skill of art or to send for foreign stems and sets, already good and approved. It seemed to him most reasonable to believe that a thing grows best where it grows naturally, and that it would hardly be equaled by another of the same kind not naturally growing there.

The abundant and varied supply of indigenous fruits in the Mississippi Valley and Lake regions is still a matter of recollection among the surviving pioneers and their descendants.

CULTIVATION OF NATIVE FRUITS.

Recorded efforts to improve the native fruits by cultivation are more numerous in connection with the colonies in Virginia and Pennsylvania than in New England.

The abundance of indigenous fruits along the James naturally suggested to the colonists the wisdom of attempting their cultivation, and efforts in this direction were encouraged by the Virginia Company. As the wine supply of the mother country came entirely from foreign lands the company sought to encourage the culture of the grape in the Jamestown colony. The first efforts in this direction seem to have been made with the native grapes, the productiveness, size, and quality of which were so highly praised by the early settlers.

Lord Delaware, who arrived in 1610, brought with him French vine dressers, who, soon after their arrival, proceeded to transplant the native vines. We have no record of the outcome of this experiment nor of that of Dale, who, soon after the settlement at Henrico, in 1611, established a vineyard of 3 acres, in which he planted the vines of the native grape to test their adaptability to the production of wines that could be substituted for those of France and Spain.

In 1619 the Virginia Company sent several French vine dressers, with many slips of the finest vines that Europe afforded. These vine dressers reported that the grapes of the colony far excelled those of their native Languedoc, both in abundance and variety, and that they had planted their cuttings at Michaelmas and obtained grapes from them in the following spring. By an act of the assembly of that year every householder was compelled by law to plant ten cuttings and to protect them from injury. He was expected at the same time to acquire the art of dressing a vineyard, either by special

instruction or by personal observation. Such favor in the shape of bounties was bestowed upon those who actively engaged in vine culture that vineyards were established containing as many as ten thousand vines.

The wines sent to England failed to equal the expectations of the promoters, their inferior quality being ascribed at the time to the defective manner of manufacture. Some ascribed it to the perverseness of the vine dressers, who were thought to have concealed their knowledge out of spite against their employers, and by way of punishment the assembly refused to grant them permission to cultivate tobacco, to which crop they had probably turned to gain a subsistence.

Penn's inclination to favor the cultivation of native rather than introduced fruits has already been noted. But the failure of the native grapes to yield a good quality of wine whenever tried seems to have diverted attention from their improvement and that of other native fruits for about a century, and to have stimulated efforts to introduce the fruits of the Old World in the several colonies.[1]

INTRODUCTION OF EXOTIC FRUITS.

The first recorded effort at introducing foreign fruits was made by the Jamestown colonists in May, 1607. Within two weeks after their arrival on Jamestown Island they had cleared land for sowing English wheat, and had reserved a space for a garden, in which were planted seeds of fruits and vegetables not indigenous to the country, including the melon, the potato, the pineapple, and the orange. These had doubtless been obtained by the colonists at Dominica or elsewhere in the West Indies while en route. The fate of the effort, so far as the pineapple and orange are concerned, may safely be left to the imagination.

The importation of cuttings of European vines in 1619 has already been noticed. In 1622, in compliance with the request of the authorities of the colony, the Virginia Company made provision for dispatching to Jamestown a pinnace containing not only wheat and barley, but also garden seeds and scions of fruit trees.

What success attended this effort is not recorded, but it is not unlikely that the apples, pears, peaches, apricots, vines, figs, and other fruits which Smith stated in 1629 "some have planted that prospered exceedingly" resulted from it. Certain it is that in 1647 the apple is recorded as grafted upon wild stocks in Virginia, while in 1686 William Fitzhugh, in describing his own plantation, mentions "a large orchard of about 2,500 apple trees, most grafted, well fenced with a locust fence."[2] By the close of the seventeenth century there

[1] For historical outline of improvement of native fruits, see "Century of American horticulture," by L. H. Bailey, in Florists Exchange for March 30, 1895.

[2] Letter of William Fitzhugh, April 22, 1686, Economic History of Virginia in the Seventeenth Century, by Philip Alexander Bruce, Vol. II, p. 243.

were few plantations in Virginia without orchards of apple, peach, pear, plum, apricot, and quince.

Frequent attempts were made to introduce in cultivation the fruits of the Mediterranean region. Importations of trees or cuttings of olives, lemons, oranges, pomegranates, and figs are frequently mentioned in the colonial records, but of these none but the fig is recorded as being successfully grown. Of this fruit, Smith wrote in 1629 that one Mistress Pearce, of Jamestown, an honest, industrious woman, had gathered from her garden in one year "neere an hundred bushels of excellent figges."

Of early introductions to New England, a memorandum was made March 16, 1629, "to provide to send for New England, Vyne Planters, Stones of all sorts of fruits, as peaches, plums, filberts, cherries, pear, aple, quince kernells, pomegranats, * * * also currant plants." It is a reasonable inference that these were sent, and that some of these and others succeeded with the colonists, for John Josselyn states in 1639 that the master of the ship in which he sailed from Boston October 11, 1839, "having been ashore upon the Governors Island, gave me half a score very fair Pippins which he brought from thence." After his second sojourn in New England, 1663–1671, he stated, "fruit trees prosper abundantly, Apple-trees, Pear-trees, Quince-trees, Cherry-trees, Plum-trees, Barberry-trees. I have observed with admiration that the kernels sown or the Succors planted produce as fair & good fruit without grafting as the Tree from whence they are taken; the Countrey is replenished with fair and large Orchards." "The Quinces, Cherries, Damsons, set the Dames a work; Marmalad and preserved Damsons is to be met with in every house." While on board ship, Josselyn was informed by one Mr. Woolcut (a magistrate in Connecticut colony) that he had made 500 hogsheads of cider from his own orchard in one year.

According to family tradition, a pear tree which stood near the mansion on Governor Endicott's farm was imported in 1630. Certain it is that Endicott soon after this propagated young trees (probably seedlings) and furnished them to other colonists both by gift and in exchange for land. Frequent importations of seeds, scions, and grafted trees, together with propagation from those already noticed, both by seeds and grafts, brought the orchards of New England up to such point that Dudley, in 1726, stated in a paper in the Philosophical Transactions, "our Apples are, without doubt as good as those of England, and much fairer to look to, and so are the Pears, but we have not got all the Sorts. * * * Our People of late years, have run so much upon Orchards, that in a village near Boston, consisting of about forty Families, they made near ten Thousand Barrels [of cider]."

Perhaps the earliest recorded grafted tree brought from Europe (that of Governor Endicott is stated to have been a seedling) was the

Summer Bonchretien, planted by Governor Stuyvesant in 1647 in New Amsterdam. It is said to have been brought from Holland, and its trunk remained standing on the corner of Third avenue and Thirteenth street, New York City, until 1866, when it was broken down by a dray. Many of the earliest introductions of named varieties of the pear, including White Doyenne, St. Germain, Brown Beurre, Virgouleuse, etc., were made by the French Huguenots, who settled about Boston and New York shortly after the revocation of the Edict of Nantes in 1685.

The early French colonists established orchards and vineyards along the rivers and lakes of the interior soon after their arrival. Through the agency of trappers and appreciative Indians, these fruits were soon widely distributed. Seedling trees of apple, pear, and peach were found bearing fruit in isolated localities throughout the Mississippi Valley and in the vicinity of the Great Lakes when the later settlers migrated there previous to the year 1800.

There is ample evidence that by the beginning of the present century few established homesteads in the Eastern United States were without a home supply of apples in their season, while many had peaches, pears, plums, cherries, and other fruits. But aside from the sale of cider made from apples, brandy from peaches, and, in a few localities, wine from wild or cultivated vines of the native grape, commerce in domestic fruits or their products could hardly be said to exist.

THE BEGINNING OF FOREIGN TRADE IN FRUITS.

The beginning of the foreign fruit trade of the United States is with difficulty distinguished at this time, but it seems to have started with the receipt of a shipment made in 1621 by the governor of Bermuda to the Jamestown colony. It consisted of "two great Chests filled with all such kinds and sorts of Fruits and Plants as their Hands had; as Figs, Pomegranats, Oranges, Lemons, Sugar-canes, Plantanes, Potatoes, Papawes, Cassado roots, red Pepper, the Prickell Peare, and the like."[1] This was followed within a few months by the arrival in Bermuda from Virginia of "a small Barke with many thanks for the presents sent them; much Aquauitae, Oile, Sacke, and Bricks they brought in exchange of more Fruits and Plants, Ducks, Turkies, and Limestone; of which she had plenty and so returned."[2] As intercourse was frequent, there was undoubtedly a considerable import trade in such fresh fruits of the Tropics as would endure sail transportation between the more southern coast colonies and the West Indies, though little is on record to bear witness to the fact.

At what time the trade in the fruit products of southern Europe began is not known, but it was doubtless at an early day. The

[1] Capt. John Smith's Works, p. 681.
[2] Ibid., p. 682.

inventory of the Hubbard store, York County, Va., in 1667, discloses the following items: "Twenty-five pounds of raisins, one hundred gallons of brandy, and twenty gallons of wine."

As most of the dried and preserved fruits of the Mediterranean region were then considered luxuries rather than necessities, it is likely that the trade in them did not become important until the colonies had accumulated considerable wealth. It probably became an important item before the Revolution, and was, no doubt, seriously interfered with during the second war with England. It is a tradition among the fruit dealers of New York City that when it was desired to celebrate the signing of the Treaty of Peace in 1814 by a grand banquet, only a half barrel of raisins and currants and a box or so of citron could be found in the city for the making of a plum pudding.[1]

In 1821, when the Treasury Department published its first statement of imports and exports, the imports of fruits and nuts, of which currants, raisins, figs, plums, prunes, and almonds are separately stated, amounted to 2,878,873 pounds, valued at $181,035.

At about this time notices of auction sales of the fruits mentioned, and of oranges, lemons, Malaga grapes in jars, tamarinds, citron, Madeira nuts, and filberts were of frequent occurrence in the market reports of New York City.

The export trade seems to have begun with the apple, as a large supply existed in close proximity to the seaport towns. Trade in this fruit with the West Indies probably developed early in the eighteenth century, though we have no record of shipments until 1741, when it is stated that apples were exported from New England to the West Indies in considerable abundance. No transatlantic shipment has been disclosed earlier than that of a package of Newtown Pippin of the crop of 1758 sent to Benjamin Franklin while in London. The sight and taste of these brought to John Bartram, of Philadelphia, an order for grafts of the variety from Franklin's friend Collinson, who said of the fruit he ate: "What comes from you are delicious fruit—if our sun will ripen them to such perfection." Subsequently a considerable trade must have resulted, for in 1773 it was stated by the younger Collinson, that while the English apple crop had failed that year, American apples had been found an admirable substitute, some of the merchants having imported great quantities of them. In his words: "They are, notwithstanding, too expensive for common eating, being sold for two pence, three pence, and even four pence an apple. But their flavor is much superior to anything we can pretend to, and I even think superior to the apples of Italy."

Statistics on the subject are lacking until 1821, when the total export of fruit included in the Treasury statement consisted of 68,443 bushels of apples, valued at $39,966.

[1] Letter from Hon. Antonio Zucca, January, 1898.

STATISTICS[1] OF THE FOREIGN FRUIT TRADE.

Since 1821 it has been possible to trace with some degree of accuracy the course of the foreign trade in fruits. With this end in view, a table showing the imports for the fiscal year 1821 is given; also tables showing average annual quantity and value by decades and imports by years since 1891 of each fruit itemized in the Treasury reports.

Imports of fruits during the fiscal year 1821.

Fruits.	Quantity.	Value.
	Pounds.	
Currants	24,688	
Figs	259,617	
Plums and prunes	125,300	
Raisins in jars	1,030,240	
All other raisins	1,171,210	
Almonds	264,818	
	2,878,873	$181,035
Olive oil, gallons	49,530	51,680

DRIED FRUITS.

RAISINS.

The largest item by far among the fruit imports of 1821 was raisins, more than three-fourths of the total quantity imported consisting of this fruit. During the decade ending 1840 the average annual quantity imported, as shown in the table, was nearly three times as great as during the first decade. Later the rate of increase was less, though imports continued to grow larger until the year 1884, when the maximum importation—56,676,657 pounds, valued at $3,545,916.15—was reached. Since that time, in consequence of domestic production, almost wholly in California, the imports have diminished to about one-fifth of the maximum in quantity and to a little less than one-seventh in value. The following tables show the average annual imports of raisins by decades, 1830 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of raisins, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1830	4,437,930	
1840	13,203,732	[1]$787,793.00
1850	13,492,060	580,488.00
1860	19,008,255	1,086,238.00
1870	21,468,783	1,279,256.00
1880	33,731,861	2,200,215.00
1890	41,817,016	2,646,226.00
1891-1897	18,473,610	878,713.87

[1] Average annual value for eight years, 1833 to 1840, inclusive.

[1] All statistics of imports prior to 1868 in these tables are from the Treasury statements of "imports;" beginning with that year they are from "imports for consumption."

1.

D.G. Passmore, fecit.

2.

B. Heiges, fecit.

RAISIN GRAPES.

A. Hoen & Co. Lith.

1. GORDO BLANCO, MUSCATEL. 2. ALEXANDRIA, MUSCAT.

Imports of raisins, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	37,174,186	$1,962,642.55
1892	18,873,670	927,247.44
1893	23,598,985	1,125,522.60
1894	13,660,498	566,626.90
1895	13,888,095	593,118.64
1896	10,202,086	443,285.00
1897	11,917,756	532,554.00

The introduction of the raisin varieties of grape to California is credited by Eisen to Col. Agoston Haraszthy, who, in 1852, imported vines of the Alexandria *Muscat* from Malaga, and in 1861 brought cuttings of Gordo Blanco from the same place. Numerous importations were made in subsequent years by different persons, but not until 1863 is there record of the production of cured raisins. In that year the late Dr. John Strentzel, of Martinez, exhibited at the California State Fair specimens of Muscat raisins, together with the dried fruit of four other varieties of grapes, to show the contrast between raisins and dried grapes. In 1873, 6,000 boxes, mostly from two vineyards in Solano and Yolo counties, were produced. In that year the first planting of raisin varieties was made at Fresno, and at Riverside in the same year, after which time the increase in production was rapid, 20,000,000 pounds having been produced in California in the year 1889, according to Eisen.

According to the California State Board of Horticulture, the shipments of raisins out of the State in 1896 amounted to nearly 69,000,000 pounds, a quantity considerably less than that of the three preceding years. The largest crop yet marketed, that of 1894, is estimated at 103,000,000 pounds. So far as can be seen, the production is capable of indefinite future increase, the recent low price of the product alone holding it in check.

The varieties of grape chiefly grown for curing into raisins are Gordo Blanco, *Muscatel*, and Alexandria *Muscat*, small second-crop clusters of which, from John Rock, Niles, Cal., 1897, will be found illustrated on Pl. III. In addition to these, there is an increasing production of the Sultana and the variety known in California as "Thompson Seedless."

Recently the seeding of raisins by machinery has been successfully inaugurated, so that at the present time California "seeded" raisins are on sale in small packages in all the leading cities.

"CURRANTS."

Imports of "currants" (the small seedless raisins of Greece) have varied greatly in quantity and value from year to year, but have on the average shown a continuous increase in quantity and value until

recently. The maximum quantity was reached in 1894, when, under stimulus of an expected levy of duty, the quantity imported reached 52,350,053 pounds, valued at $773,952. The maximum value occurred in 1891, when 42,849,314 pounds, valued at $1,577,852.15, were imported. The following tables show the average annual imports of currants by decades, 1830 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of currants, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1830	189,523	
1840	[1] 489,747	[1] $41,772.00
1850	1,334,631	60,860.00
1860	3,176,464	165,316.00
1870	5,896,839	196,447.00
1880	16,491,727	649,900.00
1890	28,189,074	1,022,075.00
1891-1897	34,505,448	872,941.02

[1] Average annual quantity and value for eight years, 1833 to 1840, inclusive.

Imports of currants, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	42,849,814	$1,577,852.15
1892	36,695,728	1,200,095.75
1893	33,166,364	1,185,532.00
1894	52,350,053	773,952.00
1895	15,936,019	250,658.00
1896	32,351,985	540,694.25
1897	28,218,176	572,803.00

Currants, though long tested in a small way, have not up to this time been largely produced in this country. Vines of "Sultana" and "Corinth" grapes were imported as early as 1854 by the Patent Office and distributed in the "Middle and Western States," but like other varieties of the *vinifera* species did not succeed. At present prices there is little inducement for their production in California, but recent experience in certain localities in that State indicates that any marked rise in price would be followed by a considerable production of currants.

PLUMS AND PRUNES.

Plums and prunes to the quantity of 125,300 pounds were imported in 1821, and with the exception of the decade ending in 1850 a continuous and rapid increase in both quantity and value is shown by the annual averages until after 1890. The maximum importation occurred in 1888, when 82,914,579 pounds were received, valued at

$2,679,759.16, though the maximum value, $3,084,304.10, was attained in 1882. Since 1891 the decrease has been rapid, the quantity received in 1897 being less than one-eleventh and the value less than one-fortieth of that of 1892. The following tables show the average annual imports of plums and prunes by decades, 1830 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of plums and prunes, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1830	146,929	
1840	584,963	[1] $50,656.00
1850	398,422	32,233.00
1860	3,883,035	200,854.00
1870	6,333,531	318,405.00
1880	25,108,911	1,360,180.00
1890	56,928,646	2,214,184.00
1891-1897	14,323,463	682,626.56

[1] Average annual value for seven years, 1834 to 1840, inclusive.

Imports of plums and prunes, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	41,012,571.0	$2,139,215.00
1892	10,374,874.0	496,078.72
1893	23,225,821.0	1,049,896.48
1894	8,749,349.5	413,769.51
1895	15,311,695.0	533,748.21
1896	852,944.0	71,512.54
1897	596,987.0	74,165.46

The importance and rapid increase of the imports of prunes led to early efforts at their production in this country. Coxe, whose work was published in 1817, describes as grown in his time two varieties, "Prune plum" and "Prune Suisse," but does not discuss their usefulness for drying.

In 1854, when scions of "Prune d'Agen" and "Prune Sainte Catherine" were imported by the Patent Office and distributed "principally in the States north of Pennsylvania and certain districts bordering on the range of the Alleghany Mountains, in order to be engrafted upon the common plum," great hopes were held that this region would soon produce an abundance of the cured fruit. It was estimated at that time that the State of Maine alone, where the curculio was rarely seen, was "capable of raising dried prunes sufficient to supply the wants of the whole Union."

But though the trees thrived and produced fruit, as in the case of the fig in the South, the climatic conditions of the Eastern United States were found unfavorable to the production of the cured product.

The commercial production of prunes in this country may therefore be said to trace to a package of scions brought to San Francisco from France in 1856 by Pierre Pellier, and by him sent to his brother Louis at San Jose, Cal. But not until 1870, according to Lelong, was a large orchard planted. This was near San Jose, and its success led to the planting of numerous others from 1878 to 1881, since which time the industry has been firmly established on the Pacific Coast. The first cured prunes were exhibited at the California State Fair in 1863, and are said to have been of the German variety. As recently as 1881 the output of the largest growers in California did not exceed 5 or 6 tons of cured fruit per annum. The California production for 1896 was estimated at 55,200,000 pounds, a quantity which will be largely increased in the near future by the product of trees already planted but not yet of bearing age.

Outside of California the principal prune production is in Washington, Oregon, and Idaho. The Italian prune (syn. *Fellenberg*) was introduced into Oregon from the Eastern States by Seth Lewelling in 1857, and is the leading variety grown outside of California. In recent years plantings of this and other sorts in the States mentioned have been very large. The latest available estimate at this writing of the crop of 1897 in Oregon and Washington places it at 12,000,000 pounds of cured fruit. It is safe to conclude that the present prune-producing capacity of the orchards of the United States exceeds 100,000,000 pounds of cured fruit annually. The leading varieties grown in California at the present time are Agen (syns. *d'Agen*, *Petite*, *Petite d'Agen*, *French*, *California*), Sergent, *Robe de*, and Golden Drop, *Coe* (syn. *Silver Prune*), while the leading variety of the more northern district is Italian (syn. *Fellenberg*). These, with Epineuse, *Imperiale*, a promising variety recently imported from France, are illustrated on Pl. IV. The specimens shown on the plate are from the following sources: Agen, Sergent, and Golden Drop, from Leonard Coates, Napa, Cal., 1897; Italian, from the late Seth Lewelling, Milwaukee, Oreg., 1891; Epineuse, from John Rock, Niles, Cal., 1897. Numerous other European varieties are grown in a small way, and a number of promising local seedlings are commercially planted in different sections.

FIGS.

Figs constituted an important item in 1821, when 259,217 pounds were imported, and notwithstanding a considerable domestic production in recent years, the average annual imports continue to increase. The maximum quantity was reached in 1896, when 11,635,493 pounds, valued at $629,488, were imported, though the greatest value in any year was that of 1882, when it amounted to $678,341.87. The

D G Passmore.fecit

A.Hoen & Co. Lith.

PRUNES.

1. EPINEUSE, IMPERIALE. 2. SERGENT, ROBE DE. 3. GOLDEN DROP, COE.

4. AGEN, SYNS. D' AGEN, PETITE D' AGEN, "FRENCH," "CALIFORNIA."

5. ITALIAN, SYN. FELLENBERG.

D G Passmore, fecit

DRYING FIGS.

A.Hoen & Co Lith

1. SMYRNA.
2. SMYRNA SECTION.
3. ADRIATIC.
4. ADRIATIC SECTION.

following tables show the average annual imports of figs by decades, 1830 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of figs, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1830	700,769	
1840	1,056,164	[1]$83,696.00
1850	1,569,201	81,435.00
1860	4,171,327	184,128.00
1870	3,565,301	185,262.00
1880	5,436,912	370,949.00
1890	7,902,451	497,204.00
1891-1897	9,630,155	548,812.00

[1]Average annual value for seven years, 1834 to 1840, inclusive.

Imports of figs, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	9,065,663	$672,141.00
1892	8,324,861	510,591.03
1893	10,060,062	549,488.22
1894	7,930,316	372,613.50
1895	11,550,062	574,303.45
1896	11,635,493	629,488.00
1897	8,837,572	532,974.50

The early efforts at the production of figs have already been noted. Frequent importations of plants and cuttings of choice varieties were made, and at one time the hope was expressed that the South Atlantic and Gulf States would produce a sufficient supply of the dried fruit to supplant the imported article. Such has not been the fact, however, the humidity of the air during the ripening period having been found to prevent successful curing, though a family supply for immediate consumption and preserving has long been produced on the homesteads of many portions of that region. At Biloxi, Miss., and New Orleans, La., a considerable pack of canned and preserved figs is now made annually, the Celeste being preferred by canners for this use.

In California the fig was introduced by the Franciscan missionaries from Lower California, who, led by Junipero Serra, established a mission at San Diego in 1769 and later at twenty other points within the present boundaries of the State. The most widely grown and popular variety in the State until comparatively recent times was known as the California Black, or Mission, fig, but it has largely been replaced by the sort known in California as Adriatic, which, according to Eisen, was twice imported from Italy between 1867 and 1877. This variety (see Pl. V, specimen from G. C. Roeding, Fresno, Cal., 1897) is at

present the most widely planted drying fig in California. It has many points of merit, but the fact that its quality when dried is inferior to that of the imported dried fruit from Smyrna has resulted in several efforts to introduce and grow the Smyrna types of fig.

A large importation of cuttings from Smyrna was made in 1882 by G. P. Rixford for the San Francisco Bulletin and distributed widely throughout the State. Since then other importations have been made, trees from which are growing at different places. Among these importations several valuable figs are found, one of which, at least, is of superior quality for drying; but so far as tested they fail to produce fruit unless artificially pollinated. It is now generally conceded that this type of fig can not be commercially grown except by the process of caprification, which is practiced upon it in Asia. A specimen, from G. C. Roeding, Fresno, Cal., 1897, of the Smyrna fig brought to full maturity by hand or "blowpipe" pollination in 1897 is illustrated on Pl. V. As more than three-fourths of our imports of figs are now of the Smyrna type, a prompt and thorough test of caprification would seem advisable. The present annual production of cured figs in California is about 2,500,000 pounds.

DATES.

The first statistics of date importations are found in 1824, when 44,426 pounds were imported. The average annual importation shows an increase in each period save that ending in 1850. The maximum for any year, both in quantity and value, occurred in 1891, when 20,091,012 pounds, valued at $661,596.41, were received. As no dates have yet been commercially grown in this country, the causes of the continuous decrease in imports since 1891 must be found elsewhere than in domestic production.

The following tables show the average annual imports of dates by decades, 1830 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of dates, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1830	[1] 44,426	.....
1840	[2] 429,355	.....
1850	[3] 962,227	[3] $5,056.00
1860	1,553,679	28,881.00
1870	1,718,248	41,103.00
1880	4,059,331	107,682.00
1890	8,884,713	284,132.00
1891-1897	15,193,490	422,913.37

[1] Quantity for one year, 1824.
[2] Average annual quantity for three years, 1831 to 1833, inclusive.
[3] Average annual quantity and value for eight years, 1843 to 1850, inclusive.

Imports of dates, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	20,091,012.00	$661,596.41
1892	17,089,567.00	551,648.26
1893	16,248,515.00	494,628.51
1894	12,408,409.00	387,584.01
1895	14,716,765.00	308,595.45
1896	13,575,254.96	270,723.89
1897	12,225,111.00	285,617.06

TAMARINDS.

Tamarinds were first separately scheduled in 1873, when 54,429 pounds were received, valued at $2,422.10. There has been a regular increase in the annual average since that time, though the imports fluctuate greatly from year to year. There is no domestic commercial production of this fruit. The following tables show the average annual imports of tamarinds by decades, 1880 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of tamarinds, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1880	[1] 16,542	[2] $644.49
1890	[3] 52,145	1,976.11
1891-1897		2,891.10

[1] Average annual quantity for seven years, 1873 to 1876, inclusive, and 1878 to 1880, inclusive.

[2] Average annual value for eight years, 1873 to 1880, inclusive.

[3] Average annual quantity for five years, 1881 to 1885, inclusive.

Imports of tamarinds, by years.

Year.	Value.
1891	$6,233.00
1892	5,471.00
1893	1,401.00
1894	1,247.00
1895	470.00
1896	2,716.76
1897	2,699.00

Fresh Fruits and Fruit Products.[1]

ORANGES.

Auction sales of oranges from the Mediterranean were of frequent occurrence in New York City early in the present century, but no separate mention of oranges in the schedules of imports appeared until 1855, when their value is given as $476,694. During the four years that this fruit was separately scheduled the imports varied from that amount to $753,695 in 1860. From 1862 to 1882, inclusive, oranges are not separately stated; but in 1883, when the item reappears, it amounts to $3,010,662.56. This was the maximum, and was followed by a decline, which reached its lowest point in 1894. The great freezes of 1894 and 1895 were promptly followed by largely increased importations, which probably reached their maximum in 1897, when a value of $3,341,646.64 was reached. The following tables show the average annual imports of oranges by decades, 1860 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of oranges, by decades.

Decade ending—	Value.
1860	[1] $625,024.00
1870 [2]	[3] 481,641.00
1880 [2]	
1890 [2]	[4] 2,298,447.34
1891-1897	2,054,408.92

[1] Average annual value for three years, 1858 to 1860, inclusive.
[2] Oranges were included with lemons and limes from 1862 to 1865, and with lemons from 1866 to 1882, inclusive.
[3] Value for one year, 1861.
[4] Average annual value for eight years, 1883 to 1890, inclusive.

Imports of oranges, by years.

Year.	Value.
1891	$2,330,127.71
1892	1,210,080.90
1893	1,696,277.24
1894	1,111,059.15
1895	1,907,515.31
1896	2,694,155.50
1897	3,341,646.64

The sour orange is supposed to have been introduced to Florida soon after the settlement of St. Augustine in 1565. The species found a congenial home, and was soon widely scattered throughout the

[1] Not including wine and brandy.

peninsula. The sweet orange was undoubtedly introduced at a later date, and being easily propagated both by seeds and buds was generally distributed throughout the settled portions before the beginning of the present century. Commercial orange culture as now practiced did not begin until after the acquisition of Florida by the United States, and at first was confined to such eligible sites as existed along navigable water which afforded transportation for the fruit. After the close of the late war the industry grew with wonderful rapidity as railroads and steamboats made possible the shipment of the fruit for longer distances. In the season of 1886–87 over 1,000,000 boxes were marketed, and by 1894–95 the annual crop amounted to over 5,000,000 boxes. Since 1894–95 shipments have been comparatively insignificant, but with favorable seasons may be expected to reach 1,000,000 boxes by the year 1900.

A considerable production of oranges was developed in a limited district in southern Louisiana previous to 1886, but since the freeze of that year the crop of that district has been of little commercial importance.

In California the orange was planted in the mission gardens at an early date, and according to a recent writer in the Fruit Trade Journal the first orchard was planted at San Gabriel in 1804. An orchard was planted at Los Angeles by Don Louis Vignes in 1834, and General Bidwell reported that in 1845 the three largest orange orchards there were those of Wolfskill, Carpenter, and Vignes.

The present era of commercial orange growing in California dates from the foundation of the Riverside colony in 1872. The orange was largely planted early in the history of the colony, and after the adaptability of the Bahia (syns. *Washington Navel*, *Riverside Navel*, etc.), two trees of which were sent to Riverside by Mr. William Saunders, of the Department of Agriculture, in 1873, was demonstrated, it soon became, as it continues to be, the leading fruit of the district. Oranges are grown commercially in several portions of the State, but chiefly in southern California. It is estimated that the crop now being marketed from the State will exceed 3,500,000 boxes.

Oranges are also commercially grown in Arizona, shipments aggregating 149 car loads having been made from Phœnix in a single week of December, 1897.

LEMONS.

Imports of lemons were first separately stated in 1858, when they amounted to $301,492. From 1862 to 1882, inclusive, lemons were not separately scheduled, but in 1883 the imports had risen in value to $2,555,787.49. The maximum was reached in 1896, when lemon imports amounted to $5,027,732.95. The tables on page 322 show the average annual imports of lemons by decades, 1860 to 1890, and imports by years, 1891 to 1897, inclusive.

Average annual imports of lemons, by decades.

Decade ending—	Value.
1860	[1] $345,957.00
1870[2]	[3] 215,903.00
1880[2]	
1890	[4] 3,024,557.95
1891–1897	4,450,725.74

[1] Average annual value for three years, 1858 to 1860, inclusive.
[2] Included with limes and oranges, 1862 to 1865, and with oranges from 1866 to 1882.
[3] Value for one year, 1861.
[4] Average annual value for eight years, 1883 to 1890, inclusive.

Imports of lemons, by years.

Year.	Value.
1891	$4,345,979.08
1892	4,560,261.17
1893	4,993,829.87
1894	4,284,815.92
1895	3,917,106.75
1896	5,027,732.95
1897	4,025,354.49

Lemon production on a commercial scale in Florida is commonly traced to the introduction of choice Mediterranean varieties by General Sanford about 1874. Much difficulty was for some years experienced in determining the proper methods of curing and marketing the fruit, and just as a reasonable degree of success was attained the freezes of 1894 and 1895 destroyed a very large proportion of the groves of the State. As the lemon is less hardy than the pomelo and orange, comparatively little interest in its culture has been manifested in Florida since 1895.

In California commercial lemon culture is also of comparatively recent date, a beginning having been made at National City by F. A. Kimball in 1869. It is estimated by the California Fruit Grower that on January 1, 1897, there were 1,197,098 lemon trees in orchards in the State, of which 231,510 were of bearing age. The crop of 1896–97 which, as nearly as could be determined, amounted to 462,900 boxes, is likely to show a large annual increase and to greatly reduce importations of this fruit.

LIMES.

Limes were first separately scheduled in 1858, when imports amounted to but $2,024. So far as can be ascertained, the maximum importation was reached in 1891, when the value was $59,867.35. A distinct decrease has occurred since then, the imports of 1897 amounting to but $28,700.29. The following tables show the average annual

imports of limes by decades, 1860 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of limes, by decades.

Decade ending—	Value.
1860	[1] $3,321.00
1870	[2] 10,150.00
1880	[3] 29,795.80
1890	48,705.70
1891-1897	41,437.46

[1] Average annual value for three years, 1858 to 1860, inclusive.
[2] Value for one year, 1861.
[3] Average annual value for nine years, 1872 to 1880, inclusive.

Imports of limes, by years.

Year.	Value.
1891	$50,807.35
1892	37,829.45
1893	47,196.36
1894	48,763.50
1895	28,103.63
1896	39,001.69
1897	28,700.29

Though grown in a small way in southern Florida since an early date, the lime has never risen to distinct commercial importance there, while in California, except possibly in a few specially favored localities, its cultivation for market has not been attempted.

IMPORTS OF ORANGES, LEMONS, AND LIMES COMBINED.

To show clearly the growth of the trade in the more important citrus fruits, tables showing the combined average annual imports of oranges, lemons, and limes by decades, 1860 to 1890, and imports by years, 1891 to 1897, inclusive, together with tables of such of the more important manufactured products derived from the fruits mentioned as are capable of segregation, are given as follows:

Average annual imports of oranges, lemons, and limes, by decades.

Decade ending—	Value.
1860	[1] $837,102.33
1870	[2] 1,347,060.46
1880	[3] 3,661,843.56
1890	5,245,820.89
1891-1897	6,546,552.07

[1] Average annual value for six years, 1855 to 1860, inclusive.
[2] Exclusive of limes, 1866 to 1870.
[3] Exclusive of limes for 1871.

Imports of oranges, lemons, and limes, by years.

Year.	Value
1891	$6,735,974 14
1892	5,808,171 52
1893	6,737,303 47
1894	5,444,658 57
1895	5,942,725 20
1896	7,561,490 14
1897	7,385,701 42

Average annual imports of lemon and orange oil, by decades.

Decade ending—	Quantity	Value
	Pounds.	
1870	[1] 51,897.00	[1] $102,217 78
1880	72,186 51	182,447 15
1890	154,217.61	211,321.96
1891–1897	225,731.00	285,390 63

[1] Average annual quantity and value for six years, 1865 to 1870, inclusive.

Imports of lemon and orange oil, by years.

Year.	Quantity.	Value
	Pounds.	
1891	179,412.33	$270,255.30
1892	215,794 88	402,907.00
1893	222,830 72	383,226 22
1894	212,856.00	240,487 00
1895	238,281 00	216,043 00
1896	206,656.13	214,302 00
1897	304,270.90	270,023 82

Average annual imports of lemon, lime, and sour orange juice,[1] by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1870	.....	[2] $88,062.97
1880	[3] 345,568	50,916.51
1890	[4] 553,277	92,434 30
1891–1897	.....	112,056.48

[1] Lemon and lime juice only, previous to 1891.
[2] Average annual value for two years, 1869 and 1870.
[3] Average annual quantity for eight years, 1873 to 1880, inclusive.
[4] Average annual quantity for three years, 1881 to 1883, inclusive.

Imports of lemon, lime, and sour orange juice, by years.

Year.	Value.
1891	$140,672.80
1892	156,882.75
1893	195,203.50
1894	71,021.00
1895	61,884.00
1896	84,073.25
1897	74,848.00

Average annual imports of orange and lemon peel, by decades.

Decade ending—	Quantity.	Value
	Pounds.	
1870	.....	[1] $1,383.25
1880	[2] 115,000	6,225.51
1890	[3] 218,500	5,076.25
1891-1896	.....	13,540.34

[1] Average annual value for two years, 1869 and 1870.
[2] Average annual quantity for two years, 1873 and 1874.
[3] Average annual quantity for three years, 1881 to 1883, inclusive.

Imports of orange and lemon peel, by years.

Year.	Value.
1891	$5,222.14
1892	5,185.78
1893	7,742.45
1894	11,734.00
1895	20,579.02
1896	15,883.00
1897	28,466.00

The above tables show that the total imports of the three fruits named were valued in 1897 at $7,395,701.42. If to this be added the value of imports of the principal manufactured products derived from them, viz, juice, oil, and peel, together with a reasonable estimate for items like pomeloes, preserved citron, orange and lemon peel, etc., known to be included under other heads, we may safely conclude that the value of our imports of products of the genus *citrus* in 1897 exceeded $8,000,000.

BANANAS AND PLANTAINS.

The history of the development of the import trade in bananas is one of the most striking features of the American fruit trade. According to the Fruit Trade Journal, a lot of 30 bunches was brought in 1804 by Captain Chester, of the schooner *Reynard*. In 1830 the first

cargo, which consisted of 1,500 bunches, was brought, and not until 1857 was a regular trade developed between Baracoa and Boston. This continued until 1869, when an additional source of supply was needed, and Mr. William C. Bliss, the pioneer in the Baracoa banana trade, obtained a small cargo of the fruit at Port Antonio, Jamaica, and left an agent there to encourage its production. In 1870 he secured three cargoes and in 1871 seven cargoes from the same port.

Imports of bananas are first noted in 1871, when they amounted to $229,924.12 in value, and gradually increased until 1882, when they suddenly increased to $1,190,591.43, an amount nearly two and a half times as great as the average annual imports of the preceding decade. This sudden increase was in large measure due to the short fruit crop of the season of 1881 throughout the Eastern United States. The banana trade received great stimulus and the imported fruit became known and appreciated in many sections where it had been but rarely seen before; after 1881 it grew rapidly until 1891. Since the latter date there has been an apparently steady, though slow, decline in value, probably due to the increased supply of domestic fruits of other kinds. The chief sources of supply are the Central American States, Colombia, and the West Indies for the Eastern United States, and the Hawaiian Islands for the Pacific Coast. The following tables show the average annual imports of bananas by decades, 1880 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of bananas, by decades.

Decade ending—	Value.
1880	$461,735.49
1890	2,372,241.43
1891-1897	4,943,082.20

Imports of bananas, by years.

Year	Value.
1891	$5,855,682.04
1892	5,000,389.65
1893	5,361,183.34
1894	5,121,180.27
1895	4,673,833.83
1896	4,503,358.51
1897	4,085,947.82

The only domestic commercial production of bananas is in southern Florida, and this can hardly be said to furnish a local supply in the localities where grown.

The imports of plantains, which amounted to $7,596.23 in 1872, gradually increased until 1888, when a maximum of $31,786.38 was

reached. Since that year there has been a decline in the value of imports. The following tables show the average annual imports of plantains by decades, 1880 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of plantains, by decades.

Decade ending—	Value.
1880	[1] $10,902.81
1890	22,258.40
1891-1897	24,292.97

[1] Average annual value for nine years, 1872 to 1880, inclusive.

Imports of plantains, by years.

Year.	Value.
1891	$27,829.09
1892	31,124.45
1893	24,749.75
1894	17,731.85
1895	22,106.39
1896	19,264.55
1897	27,244.76

The plantain, though more highly esteemed in tropical countries than the banana, has never attained popularity in this country.

PINEAPPLES.

In view of the development of commerce with the West Indies at an early day it is probable that the pineapple, notwithstanding its perishable nature, was one of the first fruits that reached the South Atlantic ports.

Imports were not separately scheduled until 1871, when they amounted to $187,960.93. The value of imports increased until 1876, when a noticeable decrease occurred, lasting until 1881, when the minimum, $121,659.70, was reached. After this they increased until 1894, when the maximum, $753,129.32, was attained. The following tables show the average annual imports of pineapples by decades, 1880 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of pineapples, by decades.

Decade ending—	Quantity	Value.
	Barrels.	
1880		$201,766.04
1890		345,319.29
1891-1897	[1] 271,635.53	541,009.53

[1] Quantity for one year, 1897.

Imports of pineapples, by years.

Year.	Quantity.	Value.
	Barrels.	
1891		$558,287.77
1892		746,560.90
1893		743,861.22
1894		753,120.32
1895		314,539.09
1896		332,067.54
1897	271,635.53	338,619.53

Cultivation of pineapples in a small way in Florida probably began at an early day. A note in the New England Farmer for 1850 says: "The cultivation of the pineapple has been commenced in Florida, and with a little protection occasionally in winter, it is believed this delicious fruit can be raised in that State in abundance." This probably referred to efforts in the vicinity of St. Augustine, where the winter temperature is now known to be too low for this species.

In 1860 planting began on the Keys and proved so profitable that the area devoted to it has steadily increased, while its culture has extended northward along both the Atlantic and Gulf coasts of Florida, and, with shed protection, has been very successful at several points in the interior as far north as Orlando. According to Webber, about 3,000,000 fruits were produced in 1894. The freezes of the winter of 1894–95 temporarily checked the output of this fruit, but the recovery has been so rapid that a largely increased production may be expected in the future.

The variety most widely grown is the Spanish, but there is an increasing proportion of larger and better varieties, including Queen, Abbaka, Smooth Cayenne, and Porto Rico.

In California, pineapple culture is yet confined to experimental plantings, which, in one or two localities, have been fairly successful.

GRAPES.

The imports of fresh grapes consist almost entirely of the large and meaty grapes of Almeria, commonly known in our markets as "Malagas." Auction sales of such in jars, at 35 to 40 cents per pound, were of frequent occurrence in New York early in the present century, but they are not itemized in the statement of imports until 1865, when their value was $17,645. After this the increase was rapid and reasonably constant until 1894, when a value of $816,602 was attained. The maximum quantity, as near as can be ascertained, was in 1892, when 228,934 barrels of about 40 pounds each were imported. The tables on page 329 show the average annual imports of grapes by decades, 1870 to 1890, and imports by years, 1891 to 1897, inclusive.

Average annual imports of grapes,[1] by decades.

Decade ending—	Quantity.	Value.
	Barrels.	
1870		[2]$69,303.13
1880		241,235.91
1890		357,622.82
1891-1897	[3]180,742.17	502,234.70

[1] Includes grape juice or pulp from 1871 to 1883.
[2] Average annual value for three years, 1865, 1869, and 1870.
[3] Average annual quantity for six years, 1892 to 1897, inclusive.

Imports of grapes, by years.

Year.	Quantity.	Value.
	Barrels.	
1891		$534,820.80
1892	228,934.00	478,118.50
1893	158,869.57	485,763.50
1894	224,468.32	816,602.00
1895	149,791.91	335,110.00
1896	205,521.75	490,788.00
1897	170,864.51	374,440.06

On account of their firmness and long-keeping quality, these grapes occupy a position in our markets peculiar to themselves. At the present time they can hardly be said to compete with any domestic product, though by aid of refrigeration some of the meaty and late-ripening sorts of the *vinifera* type may be expected to lessen the demand for "Malagas" in future.

Though efforts at the commercial production of this type in California for shipment in the fresh state late in the season have not, up to the present time, been eminently successful; no adequate reason is known for believing that they will not be so in future when the climatic and soil conditions essential to their successful growth are better understood.

OLIVES AND OLIVE OIL.

Imports of olives were not scheduled until 1869, when they amounted to $28,896.60. A rapid increase in the annual averages has occurred since that time, the maximum value for a single year being $510,534.88 in 1893. Since then there has been a distinct diminution in the value imported, largely because of domestic production. The tables on page 330 show the average annual imports of olives by decades, 1870 to 1890, and imports by years, 1891 to 1897, inclusive.

Average annual imports of olives, by decades.

Decade ending—	Value
1870	[1] $25,130.32
1880	51,535.23
1890	133,019.48
1891–1897	355,511.03

[1] Average annual value for two years, 1869 and 1870.

Imports of olives, by years.

Year.	Value.
1891	$320,163.77
1892	417,881.55
1893	510,534.88
1894	378,863.41
1895	325,352.10
1896	347,344.70
1897	328,436.84

Olive oil was largely brought in at an early date, the imports of 1821 having been valued at more than one-fourth as much as all the fruit imports of the year. Previous to 1862 no distinction was made between oil suitable for food and the inferior grades, but so far as can be determined from the schedules there has been a much more rapid increase in the imports of salad oil than of the inferior grades since that time. The imports of salad oil for 1897 were considerably in excess of those of any former year, being valued at $1,146,494.52. The following tables show the average annual imports of olive oil in casks, or other than salad, by decades, 1830 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of olive oil, by decades.

[In casks, or other than salad.]

Decade ending—	Quantity.	Value.
	Gallons.	
1830	77,525	[1] $86,424.00
1840	196,191	[2] 147,008.00
1850	83,589	54,385.00
1860	131,944	92,475.00
1870	[3] 155,849	[3] 127,578.00
1880	121,678	90,301.00
1890	[4] 556,149	511,140.00
1891–1897	608,512	321,588.00

[1] Average annual value for four years, 1821 to 1824, inclusive.

[2] Average annual value for seven years, 1834 to 1840, inclusive.

[3] Average annual quantity and value for three years, 1862 to 1864, inclusive; includes quantity and value of all olive oil.

[4] Includes all olive oil for the seven years, 1884 to 1890, inclusive.

Imports of olive oil, by years.

[In casks, or other than salad.]

Year.	Quantity.	Value.
	Gallons.	
1891	709,496.19	$458,069.55
1892	600,379.00	255,867.00
1893	986,379.00	181,171.00
1894	391,601.00	180,212.00
1895	829,889.00	336,900.00
1896	846,123.00	317,975.00
1897	525,630.00	220,906.00

The following tables show the average annual imports of olive oil in bottles, or suitable for salad, by decades, 1860 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of olive oil, by decades.

[In bottles, or suitable for salad.]

Decade ending—	Quantity.	Value.
1860 ..... dozens..	[1] 142,311.00	[1] $207,266.00
1870 ..... gallons..	[2] 142,880.00	[2] 260,620.00
1880 ..... do....	183,248.00	336,555.00
1890 ..... do....	[3] 235,307.00	[3] 413,824.00
1891-1897 ..... do....	937,216.39	909,246.15

[1] Average annual quantity and value for six years, 1855 to 1860, inclusive.

[2] Average annual quantity and value for seven years, 1861 and 1865 to 1870, inclusive; quantity for 1861 stated in dozens.

[3] Average annual quantity and value for three years, 1881 to 1883, inclusive.

Imports of olive oil, by years.

[In bottles, or suitable for salad.]

Year.	Quantity.	Value.
	Gallons.	
1891	395,731.42	$516,190.89
1892	685,079.98	852,655.11
1893	686,759.51	902,076.45
1894	741,458.91	900,013.10
1895	777,047.54	953,832.65
1896	918,629.40	1,066,430.39
1897	945,828.00	1,146,494.52

As early as 1634 an attempt was made to introduce the olive to Virginia, and at frequent intervals down to the present century its culture was attempted at different points in that State. In 1755 it was

introduced at Charleston, S. C., by Henry Laurens, and again at the same point in 1785 by an incorporated society for the promotion of agriculture. In 1769 it was introduced by Dr. Turnbull, an Englishman, who founded a colony of Greeks and Minorcans at New Smyrna, Fla.; but nowhere in the Eastern States has it become of commercial importance.

In 1769 olive seeds were planted at San Diego, Cal., and some of the trees which grew from them are still in existence. These and others about the California missions demonstrated the suitability of the soil and climate to olive production at an early day, but not until after the American occupation of the Territory did olive culture assume commercial importance.

In 1872 Mr. Ellwood Cooper, of Santa Barbara, planted olive trees, from the fruit of which he made oil in 1876, and since that time the olive has become a favorite tree with planters in several counties in the State. Statistics of production are not obtainable, but the output of oil and pickled olives is increasing largely each year. It is estimated by the California Fruit Grower that there are 1,400,000 olive trees in orchard in California at the present time.

The superior cleanliness observed in the manufacture of oil in California, together with the guarantied purity of the product, can hardly fail to cause the domestic article to largely supplant the imported oil in our markets in the near future. The consumption of pickled olives in the United States is increasing rapidly, and the recent introduction of the variety from which the celebrated "Queen" olives of Spain are made, together with the superior quality of the pickled ripe olives packed in California, are likely to result in the displacement of the imported article. Two varieties, the Mission and Sevillano, are illustrated on Pl. VI, specimens from John Rock, Niles, Cal., 1897.

Miscellaneous Fruits.

The following tables show the average annual imports of fruits not separately scheduled by decades, 1860 to 1890, and imports by years, 1891 to 1897, inclusive. The number of items included under each head has varied greatly at different times, and distinct comparisons of the periods specified can not be safely made.

Average annual imports of fruits in juice, and fruit juice, by decades.

Decade ending—	Value.
1870	[1] $48,146.31
1880	106,425.70
1890	233,219.74
1891–1897	127,753.52

[1] Average annual value for six years, 1865 to 1870, inclusive.

D.G Passmore, fecit.

OLIVES.

A. Hoen & Co. Lith.

1. MISSION. 2. SEVILLANO.

Imports of fruits in juice, and fruit juice, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	240,080,906	$52,190.22
1892		124,362.45
1893		84,394.90
1894		71,123.51
1895		131,692.08
1896		206,931.03
1897		222,571.48

Average annual imports of fruits preserved in brandy, sugar, etc., by decades.

Decade ending—	Value.
1860	[1] $129,615.50
1870	181,967.15
1880	343,066.16
1890	620,641.28
1891-1897	561,903.70

[1] Average annual value for six years, 1855 to 1860, inclusive.

Imports of fruits preserved in brandy, sugar, etc., by years.

Year.	Value.
1891	$968,960.94
1892	934,537.27
1893	780,352.44
1894	479,604.11
1895	479,400.21
1896	442,911.60
1897	447,559.39

Average annual imports of green, ripe, or dried fruits, not elsewhere scheduled, by decades.

Decade ending—	Value.
1860	[1] $185,249.66
1870	84,704.89
1880	138,326.58
1890	374,675.49
1891-1897	405,420.15

[1] Average annual value for six years, 1855 to 1860, inclusive.

Imports of green, ripe, or dried fruits, not elsewhere scheduled, by years.

Year.	Value.
1891	$535,711.22
1892	294,568.24
1893	435,716.38
1894	321,050.56
1895	361,894.00
1896	430,709.30
1897	398,291.25

Nuts and Nut Products.

ALMONDS.

The first nut imported in large quantity was the almond, of which 264,818 pounds were received in 1821. From that date until 1843 no other kind of nut is scheduled. In 1859 the imports had risen to 5,439,210 pounds, valued at $444,757. Since 1865 shelled almonds have been separately scheduled, and the imports, in this form, which began with 116,899 pounds, valued at $17,660, in that year, have risen to 5,798,354 pounds, valued at $683,446.34, in 1897. The extraordinary increase since 1890 in the imports of shelled almonds, as compared with almonds not shelled, is believed to be largely due to the fact that the several rates of duty that have prevailed during that period have been proportionately higher on almonds not shelled than on shelled almonds. The following tables show the average annual imports of almonds by decades, 1830 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of almonds, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1830	637,806	
1840	2,240,451	[1]$197,059.00
1850	1,493,692	113,840.00
1860	3,352,759	254,859.00
1870	2,290,157	234,621.00
1880	2,514,052	266,551.00
1890	3,121,444	309,318.00
1891-1897	3,500,835	264,218.73

[1] Average annual value for seven years, 1834 to 1840, inclusive.

Imports of almonds, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	3,390,924.50	$292,510.85
1892	3,451,840.50	290,744.20
1893	2,780,011.00	270,742.00
1894	3,305,360.00	259,139.69
1895	4,178,419.00	281,296.51
1896	3,202,684.16	210,690.15
1897	4,196,000.00	244,408.06

Average annual imports of shelled almonds, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1870	640,530	[1]$106,743.00
1880	980,873	169,417.00
1890	1,684,410	276,470.00
1891-1897	4,020,227	611,908.00

[1] Average annual value for six years, 1865 to 1870, inclusive.

Imports of shelled almonds, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	3,046,750	$615,418.96
1892	3,598,551	667,179.46
1893	3,758,500	664,562.27
1894	3,505,178	519,584.34
1895	4,188,831	561,064.67
1896	4,245,426	572,105.70
1897	5,798,354	683,446.34

On account of its close relationship to the peach, the almond was at one time regarded as a very promising tree for the Eastern United States. Previous to 1855, the Patent Office distributed an importation of soft-shelled almonds to growers throughout the Middle and Southern States. Its early blooming habit and susceptibility to injury by late frosts soon demonstrated the fact that though the tree succeeded it was valueless as a producer of nuts even in the Gulf States. In California many of the earlier efforts at commercial almond culture were unsuccessful, either because they were made with unreliable varieties or in unsuitable localities. But in 1885, when Mr. A. T. Hatch exhibited a collection of thin-shelled seedlings from the bitter almond which had proved to be of superior quality for market, and bore regular crops, new life was given to the industry.

The production in California now varies from 500,000 to 2,500,000 pounds per annum, and the quality of the product compares favorably with all but the best of the imported nuts. Specimens of a number of the leading varieties grown in that State from John Rock, Niles, 1897, A. T. Hatch, Suisun, 1891, and from Malaga, Spain, through Charles Heath, former United States consul at Catania, Sicily, 1892, are illustrated on Pl. VII.

Almonds are also successfully grown in rather limited areas in Texas, New Mexico, Arizona, Nevada, Utah, Idaho, and Oregon.

ALMOND OIL.

So far as known no almond oil is produced in the United States. The following tables show the average annual imports of almond oil by decades, 1870 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of sweet almond oil, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1870	[1] 15,228.00	[1] $4,888.08
1880	25,165.00	9,203.39
1890	40,599.00	10,531.62
1891-1897	88,138.92	17,729.37

[1] Average annual quantity and value for eight years, 1863 to 1870, inclusive.

Imports of sweet almond oil, by years.

Year	Quantity.	Value.
	Pounds.	
1891	51,384.0	$12,248.95
1892	60,670.5	13,636.35
1893	212,919.0	30,583.50
1894	59,730.0	12,682.45
1895	74,195.0	13,103.80
1896	71,480.0	13,791.00
1897	86,594.0	19,059.59

Average annual imports of bitter almond oil, by decades.

Decade ending—	Quantity	Value
	Pounds.	
1880	3,454.76	$11,428.45
1890	3,573.58	8,969.59
1891-1897	6,632.92	10,604.53

D.G. Passmore, fecit. **ALMONDS.** A. Hoen & Co. Lith.

1. DRAKE. 1A. DRAKE KERNEL. 2. LANGUEDOC. 2A. LANGUEDOC KERNEL. 3. NONPAREIL. 3 A. NONPAREIL KERNEL. 4. PRIMA. 4 A. PRIMA KERNEL. 5. NE-PLUS-ULTRA. 5 A. NE-PLUS-ULTRA KERNEL. 6. IXL. 6 A. IXL. KERNEL. 7. JORDAN. 7 A. JORDAN KERNEL.

Imports of bitter almond oil, by years.

Year	Quantity.	Value.
	Pounds.	
1891	4,795.00	$9,958.00
1892	6,149.00	11,023.00
1893	8,165.80	11,572.89
1894	4,104.00	6,981.00
1895	6,549.00	10,566.00
1896	6,195.75	12,141.83
1897	10,471.90	12,029.00

FILBERTS AND WALNUTS.

These nuts have been scheduled together, beginning with 4,890,385 pounds, valued at $118,721, in 1865. Since 1890 the shelled nuts have been separately scheduled. The greatest value imported in a single year was in 1891, when the imports of shelled and unshelled together amounted to $953,082.84. The apparent decrease in imports since that year is undoubtedly due to the largely increased domestic production of walnuts. Filberts are not grown on a commercial scale in this country. The following tables show the average annual imports of filberts and walnuts by decades, 1870 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of filberts and walnuts, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1870	[1] 3,986,021	[1] $170,089.65
1880	4,962,243	289,823.57
1890	9,523,104	548,694.82
1891-1896	[2] 12,894,106	645,150.56

[1] Average annual quantity and value for six years, 1865 to 1870, inclusive.
[2] 1891 to 1897, exclusive of shelled filberts and walnuts.

Imports of filberts and walnuts, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	15,119,507.0	$872,043.84
1892	12,382,096.0	647,628.55
1893	11,900,846.0	673,705.00
1894	10,122,079.5	450,834.00
1895	11,670,895.0	530,922.13
1896	16,226,147.0	638,000.46
1897	12,827,174.5	632,858.00

Average annual imports of filberts and walnuts, shelled,[1] 1891 to 1897.

Period.	Quantity.	Value.
	Pounds.	
1891-1897	1,186,735	$134,354.35

Imports of filberts and walnuts, shelled, by years.

Year	Quantity.	Value.
	Pounds.	
1891	511,709	$81,039.00
1892	863,309	98,417.00
1893	1,380,070	168,867.00
1894	1,008,626	116,573.00
1895	1,395,559	155,415.00
1896	1,658,069	169,014.50
1897	1,489,803	151,295.06

[1] Included with "filberts and walnuts" previous to 1891.

Although scattered trees of the Persian (English) walnut were planted in the Eastern United States at an early day, no commercial plantings resulted from them. Like the almond, their blossoms suffer from late frosts too frequently to permit regular crops, though in a few sheltered localities the trees are rarely injured, and are reasonably productive.

In California the walnut was introduced at the missions, and several commercial orchards are recorded by Lelong as having been planted from 1843 to 1865. The earlier plantings were of the "Mission," or "English" type, and in many localities the trees were found to lack productiveness. More recently, improved sorts producing more regular crops of "soft-shell" nuts were introduced, and since their general planting began walnut culture has greatly increased.

The crop of the State for 1896 was estimated to exceed 8,000,000 pounds, and is increasing steadily.

BRAZIL, OR CREAM, NUTS.

Brazil, or cream, nuts were first scheduled in 1873, when 3,690,908 pounds were imported, valued at $170,628. The imports have fluctuated considerably from year to year, the greatest value, $471,347, being in 1892. Since then they show a material decrease. The tables on page 339 show the average annual imports of Brazil, or cream, nuts by decades, 1880 and 1890, and imports by years, 1891 to 1897, inclusive.

Average annual imports of Brazil, or cream, nuts, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1880	[1] 2,975,738	[1] $143,709.31
1890	[2] 3,802,000	188,613.32
1891-1897		330,514.71

[1] Average annual quantity and value for eight years, 1873 to 1880, inclusive.
[2] Average annual quantity for three years, 1881 to 1883, inclusive.

Imports of Brazil, or cream, nuts, by years.

Year.	Value.
1891	$394,273.00
1892	471,347.00
1893	424,893.00
1894	345,615.00
1895	181,146.00
1896	261,357.00
1897	234,972.00

Brazil, or cream, nuts are the product of a tropical species, and are not grown in any portion of the United States.

COCOANUTS AND COCOANUT OIL.

Imports of cocoanuts amounted in 1861 to $28,767, and show a great increase since that time. The following tables show the average annual imports of cocoanuts and cocoanut oil by decades, 1870 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of cocoanuts, by decades.

Decade ending—	Value.
1870	$55,006.34
1880	302,296.81
1890	[1] 722,758.31
1891-1897	[1] 751,509.72

Imports of cocoanuts, by years.

Year.	Value.
1891	[1] $922,257.33
1892	942,559.78
1893	901,234.45
1894	845,169.54
1895	512,218.24
1896	540,083.21
1897	597,045.51

[1] 1890 to 1897, inclusive, includes desiccated cocoanut, etc.

Average annual imports of cocoanut oil, by decades.

Decade ending—	Quantity.	Value.
1870.....gallons	[1] 61,402	[1] $43,301.00
1880.....do	[2] 247,517	[2] 134,891.61
1890.....pounds	[3] 12,572,520	550,958.63
1891-1897.....do	22,666,083	1,049,507.60

[1] Average annual quantity and value for two years, 1864 and 1865.
[2] Average annual quantity and value for nine years, 1872 to 1880, inclusive.
[3] Average annual quantity for seven years, 1884 to 1890, inclusive.

Imports of cocoanut oil, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	10,665,054	$560,883.00
1892	22,142,858	1,287,989.00
1893	27,684,788	1,242,542.00
1894	16,262,392	785,988.28
1895	31,722,014	1,340,208.00
1896	27,407,234	1,165,114.00
1897	22,778,247	963,879.00

The domestic production of cocoanuts, which is confined to the coast region of lower Florida, is unimportant. Imports of cocoanut oil, which were valued in 1864 at $23,942, rose to $1,340,208 in 1895, but show a decline in 1896 and 1897.

PEANUTS.

The imports of "peanuts and other ground nuts," which at one time constituted an important item, valued at $194,387 in 1864, have fallen to $2,106.85 in 1897, while the imports of the shelled nuts have fallen from 1,104,018 pounds, valued at $34,401 in 1872, to 1,060 pounds, valued at $9.14 in 1897. These decreases are due to increased domestic production. The following tables show the average annual imports of peanuts by decades, 1870 to 1890, and imports by years, 1891 to 1897, inclusive:

Average annual imports of peanuts and other ground nuts, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1870	[1] 6,522,844	[2] $184,465.49
1880	1,849,645	46,662.16
1890	170,593	3,314.24
1891-1897	149,672	2,655.13

[1] Average annual quantity for six years, 1865 to 1870, inclusive.
[2] Average annual value for seven years, 1864 to 1870, inclusive.

Imports of peanuts and other ground nuts, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	304,335	$6,552.99
1892	128,360	3,661.68
1893	73,344	1,006.72
1894	110,369	1,682.62
1895	103,674	1,215.48
1896	189,520	2,359.61
1897	138,102	2,106.85

Average annual imports of shelled peanuts and other ground nuts, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1870	[1]391,006	[1]$13,713.89
1880	375,342	14,974.95
1890	54,960	2,223.97
1891-1897	21,658	2,623.09

[1]Average annual quantity and value for five years, 1866 to 1870, inclusive.

Imports of shelled peanuts and other ground nuts, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	148,350	$18,312.83
1892		
1893	25	2.30
1894	157	9.00
1895	1,773	24.22
1896	243	4.24
1897	1,060	9.14

"ALL OTHER NUTS NOT OTHERWISE PROVIDED FOR."

The number of items included under this head varies at different periods. In 1843, when the caption "all other nuts not otherwise provided for," was first used, it included all nuts but almonds, and amounted to 1,133,302 pounds, valued at $54,535. Since then the more important kinds have been successively removed from this schedule. The most important item now included in it is probably the European chestnut, of which a considerable quantity is imported each year. The tables on page 342 show the average annual imports of "all other nuts not otherwise provided for" by decades, 1850 to 1890, and imports by years, 1891 to 1897, inclusive.

Average annual imports of "all other nuts not otherwise provided for," by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1850	[1] 2,456,800	[1] $53,898.00
1860	[2] 4,927,624	173,494.00
1870	[3] 2,156,176	124,119.00
1880	897,037	35,151.00
1890	808,068	32,461.00
1891–1897	1,944,493	61,078.91

[1] Average annual quantity and value for eight years, 1843 to 1850, inclusive.
[2] Average annual quantity for seven years, 1851 to 1857, inclusive.
[3] Average annual quantity for seven years, 1862 and 1865 to 1870, inclusive.

Imports of "all other nuts not otherwise provided for," by years.

Year.	Quantity.	Value.
	Pounds.	
1891	1,629,355.0	$54,156.45
1892	1,895,571.0	71,237.52
1893	1,891,979.0	72,359.83
1894	1,732,864.5	54,228.25
1895	1,652,184.0	48,618.49
1896	2,398,671.4	69,840.27
1897	2,410,882.0	61,311.58

The following table shows the imports of fruits and fruit products for 1897:

Imports of fruits and fruit products, 1897.

Fruits and fruit products.	Quantity.	Value.
Raisins.....pounds.	11,917,756.00	$532,554.00
Currants.....do.	28,218,176.00	572,863.00
Plums and prunes.....do.	736,987.00	74,165.46
Figs.....do.	8,837,572.00	532,974.50
Dates.....do.	12,225,111.00	285,617.06
Tamarinds		2,690.00
Oranges		3,341,646.64
Lemons		4,025,354.49
Limes		28,700.29
Lemon and orange oil.....pounds.	304,270.00	270,023.82
Lemon, lime, and sour orange juice		74,848.00
Orange and lemon peel		28,466.00
Bananas		4,085,947.82
Plantains		27,244.76
Pineapples.....barrels.	271,035.53	338,619.53
Grapes.....do.	170,864.51	374,440.03
Olives		328,436.84
Olive oil (other than salad).....gallons.	525,630.00	220,963.00
Olive oil (suitable for salad).....do.	945,828.00	1,146,494.52
Fruits in juice, and fruit juice		222,571.48
Fruits preserved in brandy, etc		447,559.30
Fruits, green, ripe, or dried, not elsewhere specified		398,291.23
Total		17,390,360.86

The following table shows the imports of nuts and nut products for 1897:

Imports of nuts and nut products, 1897.

Nuts and nut products.	Quantity.	Value.
	Pounds.	
Almonds	4,196,609.00	$844,108.07
Almonds (shelled)	5,798,354.00	683,146.34
Almond oil (sweet)	86,594.00	19,059.50
Almond oil (bitter)	10,471.90	12,020.00
Filberts and walnuts	12,827,174.50	632,858.90
Filberts and walnuts (shelled)	1,489,863.00	151,236.06
Brazil, or cream, nuts		234,972.00
Cocoanuts		597,045.51
Cocoanut oil	22,758,247.00	963,879.00
Peanuts	138,102.00	2,106.85
Peanuts (shelled)	1,060.00	9.14
All other nuts, not otherwise provided for	2,410,382.00	61,311.58
Total		3,602,421.13

The total value of the imports of fruits and fruit products and nuts and nut products in 1897 amounted to $20,962,781.99.

EXPORTS OF FRUITS AND FRUIT PRODUCTS.

APPLES.

As has been noted, the apple was the first fruit exported. Aside from apples, fresh and dried, and vinegar (one of the chief apple products), no other fruit item was scheduled among exports until 1865. Beginning in 1821 with 68,643 bushels, valued at $39,966, the annual averages, by decades, show a steady increase in the quantity of apples exported, with a slight decrease in value during the last period. The maximum quantity thus far shipped was in the fiscal year 1897, when 1,503,981 barrels, valued at $2,371,143, were exported, though the greatest value ($2,407,956) was in 1892.

Records of shipments during the latter part of the eighteenth century are lacking, but the New England export trade in ice, which began with the West Indies in 1805, was accompanied by shipments of apples on a large scale. Soon after the ice trade was extended to India and China, which was in 1830, New England apples could be had in the ice ports of those countries, and such is the case at the present time. According to the statement of B. G. Boswell, of New York,[1] in 1843, the fruit dealers of Boston had at that time been shipping apples and cranberries to Europe for many years. This writer commended the Baldwin and Newtown Pippin for the purpose, and emphasized the necessity for shipping none but "the very finest quality." The following tables show the average annual exports of apples and apple products by decades, 1830 to 1890, and exports by years, 1891 to 1897, inclusive.

[1] Transactions American Institute, 1843, p. 125.

Average annual exports of apples, by decades.

Decade ending—	Quantity.	Value.
	Barrels.	
1850	20,422	$34,495.20
1840	18,525	37,051.70
1850	30,504	61,027.30
1860	38,860	104,107.90
1870	99,316	[1] 247,113.22
1880	196,310	584,701.60
1890	546,987	1,397,377.00
1891-1897	606,176	1,354,455.28

[1] Average annual quantity and value for nine years, 1861 to 1868, inclusive, and 1870.

Exports of apples, by years.

Year.	Quantity.	Value.
	Barrels.	
1891	135,207	$476,897.00
1892	938,743	2,407,356.00
1893	408,014	1,066,967.00
1894	78,580	242,617.00
1895	818,711	1,954,318.00
1896	360,002	950,280.00
1897	1,503,981	2,351,143.00

Average annual exports of dried apples, by decades.

Decade ending—	Quantity.	Value.
	Pounds.	
1870	[1] 1,049,050	[1] $113,681.00
1880	4,632,460	289,985.50
1890	13,306,097	773,507.00
1891-1897	15,483,143	784,246.57

[1] Average annual quantity and value for six years, 1864 to 1868, inclusive, and 1870.

Exports of dried apples, by years.

Year.	Quantity.	Value.
	Pounds.	
1891	6,973,168	$409,605.00
1892	26,042,063	1,288,102.00
1893	7,966,819	482,085.00
1894	2,846,645	168,054.00
1895	7,085,946	461,214.00
1896	26,691,963	1,340,507.00
1897	30,775,401	1,340,159.00

Average annual exports of vinegar, by decades.

Decade ending—	Quantity.	Value.
	Gallons.	
1830	.....	[1]$6,502.00
1840	.....	4,688.00
1850	.....	11,956.00
1860	[2]227,248	24,148.60
1870	[3]190,551	332,014.22
1880	21,875	6,188.70
1890	54,754	10,114.00
1891-1897	85,172	11,959.00

[1] Average annual value for five years, 1826 to 1830, inclusive.
[2] Average annual quantity for six years, 1855 to 1860, inclusive.
[3] Average annual quantity and value for nine years, 1861 to 1868, inclusive, and 1870.

Exports of vinegar, by years.

Year.	Quantity	Value.
	Gallons.	
1891	68,733	$10,489.00
1892	74,890	11,690.00
1893	86,936	12,177.00
1894	68,282	9,557.00
1895	80,234	11,273.00
1896	123,163	16,975.00
1897	93,969	11,572.00

Average annual exports of cider, by decades.

Decade ending—	Quantity.	Value.
	Gallons.	
1880	.....	[1]$2,588.50
1890	388,453	60,498.40
1891-1897	564,356	77,052.85

[1] Average annual value for two years, 1879 to 1880, inclusive.

Exports of cider, by years.

Year.	Quantity.	Value.
	Gallons.	
1891	353,883	$63,582.00
1892	722,959	101,710.00
1893	732,007	97,352.00
1894	460,690	65,686.00
1895	669,745	85,675.00
1896	372,986	47,670.00
1897	637,672	77,695.00

In 1845 it is stated[1] that the Newtown Pippins from the orchard of Robert L. Pell, of Ulster County, N. Y., sold in London at $21 a barrel. The merchant to whom they were consigned wrote that the nobility and other people of great wealth bought them at retail at a guinea a dozen, or about 42 cents an apple. The next year, when his crop was estimated at from 3,000 to 4,000 barrels, the fruit sold upon arrival in New York at $6 per barrel for shipment to England.

Mr. Pell's orchard of 20,000 trees of Yellow and Green Newtown became famous on account of the high prices received for its fruit, and in consequence the varieties mentioned were planted and grafted throughout the apple regions of the country. They did not prove equally successful elsewhere, however, except in the Piedmont and Mountain regions of Virginia and North Carolina, where the principal supply of "pippins" for export has for many years past been produced.

Patrick Barry, writing from London in 1849, in commenting on the American apples then for sale in that market, emphasized the importance of sending abroad none but carefully handled fruit of select varieties, and stated as his conclusion that "the Newtown Pippin and Roxbury Russet come nearer the English taste than any other varieties we cultivate." He predicted a profitable demand for American pears in England, saying: "If we ever succeed in raising pears beyond what may be required for home consumption, they will find market and good prices here. Not one person in a thousand, I might say five thousand, ever tastes a fine pear."[2] This prediction California growers and shippers are now endeavoring to verify.

The Newtown held its supremacy for many years, though other varieties were shipped in gradually increasing quantities, and in 1880 an unusually large crop of apples caused large shipments of many kinds to be made. The shipments of apples during the fiscal year 1881 amounted to 3,071,928 bushels, valued at $2,301,334, and since that time the transatlantic trade in apples has been an important item in the export trade of the country. Until 1896 Great Britain was the only important customer, but shipments to Germany in that year have been followed by a large and growing demand, which promises well for the future.

Though the Eastern States still furnish the larger part of the apples exported, large shipments are now made from the great orchard districts of the Mississippi Valley, and some profitable shipments have recently been made from the Pacific Coast.

The export trade in dried apples was of considerable importance when the item first appeared in 1864. The shipments of that year amounted to 2,841,532 pounds, valued at $246,051. The invention of the fruit evaporator, which was perfected about 1870–75, resulted in

[1] Genesee Farmer, November, 1845, p. 175.

[2] New England Farmer, Vol. I, 1849, p. 103, copied from Genesee Farmer.

a large increase of this product, as well as in a marked improvement in its quality. Foreign demand was accordingly stimulated, and in 1881 the exports of the great crop of 1880 were 22,623,652 pounds, valued at $1,247,891.

Notwithstanding attempted discriminations against them by foreign Governments, the wholesomeness and cheapness of American dried apples have resulted in an increasing consumption abroad, as is evident by the large quantity, 30,755,401 pounds, valued at $1,340,159, exported in 1897.

Exports of vinegar were at one time relatively important, the value, $5,801, shipped in 1826 having been more than one-fifth of that of the apple exports of the same year. The maximum, $46,100, was reached in 1865, since which time the item has been unimportant.

Cider was first itemized in 1879, and was then valued at $1,662. Exports reached their highest point in 1889, when they were valued at $122,476.

CANNED AND PRESERVED FRUITS.

Exports of fruits "preserved in cans or otherwise" are first noted in 1870, when their value was $81,735. The tables indicate a large and reasonably steady growth since that time, the maximum thus far being $1,686,723 in 1897.

Since 1884 "preserved fruits" have been separately scheduled, beginning with $53,361 in that year. During 1892, 1893, and 1894 the shipments exceeded $200,000 each year, but since 1895 they have declined to $43,276 in 1897. The following tables show the average annual exports of canned and preserved fruits by decades, 1870 to 1890, and exports by years, 1891 to 1897, inclusive:

Average annual exports of canned fruits, by decades.[1]

Decade ending—	Value.
1870	[2] $81,735.00
1880	371,118.50
1890	638,010.80
1891-1897	1,142,221.71

[1] Includes fruit preserved in cans or otherwise, 1870 to 1883, inclusive.
[2] Value for one year, 1870.

Exports of canned fruits, by years.

Year.	Value.
1891	$703,880.00
1892	1,558,820.00
1893	1,137,660.00
1894	660,723.00
1895	871,465.00
1896	1,376,281.00
1897	1,686,723.00

Average annual exports of "fruits preserved (other)" for decade ending 1890.

Decade ending—	Value.
1890	[1]$45,501.00
1891-1897	129,339.85

[1] Average annual value for seven years, 1884 to 1890, inclusive.

Exports of "fruits preserved (other)," by years.

Year.	Value.
1891	$93,996.00
1892	214,738.00
1893	221,381.00
1894	211,215.00
1895	47,420.00
1896	70,353.00
1897	43,276.00

ALL OTHER GREEN, RIPE, OR DRIED FRUITS.

Under this or a similar designation a varying number of items have been included since 1865.

Beginning with $403,281 in 1865, the value did not exceed $1,000,000 in any year until 1890, when it was $1,003,846. Since that year it has risen, until in 1897 it reached $2,172,199.

Much of this increase is undoubtedly due to the increasing export shipments of dried apricots, peaches, and prunes from California, and to the fresh fruits, especially peaches, plums, pears, and oranges, which have been shipped to Europe from that State since 1891. The following tables show the average annual exports of green, ripe, or dried fruits, not elsewhere scheduled, by decades, 1870 to 1890, and exports by years, 1891 to 1897, inclusive.

Average annual exports of green, ripe, or dried fruits, not elsewhere scheduled, by decades.

Decade ending—	Value.
1870	[1]$233,496.50
1880	237,666.90
1890	458,233.10
1891-1897	1,322,356.57

[1] Average annual value for six years, 1865 to 1870, inclusive. Amount for 1869 includes "fruits of all kinds."

Exports of green, ripe, or dried fruits, not elsewhere scheduled, by years.

Year.	Value.
1891	$690,798.00
1892	1,095,845.00
1893	881,804.00
1894	1,016,397.00
1895	1,522,100.00
1896	1,868,353.00
1897	2,172,199.00

EXPORTS OF NUTS.

Exports of nuts are not mentioned until 1888, when they amounted to $27,784. The increase since that time has been reasonably steady, and the shipments in 1897 reached a value of $125,805.

Pecans and shagbarks, which are largely used by confectioners, probably constitute the more important items under this head. The following tables show the average annual exports of nuts for the decade ending 1890 and exports by years, 1891 to 1897, inclusive:

Average annual exports of nuts[1] for decade ending 1890.

Decade ending—	Value.
1890	[2] $29,335.00
1891-1897	95,114.00

[1] Included with all other green, ripe, or dried fruits previous to 1888.
[2] Average annual exports for three years, 1888 to 1890, inclusive.

Exports of nuts, by years.

Year.	Value.
1891	$50,617.00
1892	60,684.00
1893	94,902.00
1894	125,233.00
1895	115,274.00
1896	93,283.00
1897	125,805.00

HISTORICAL AND DESCRIPTIVE NOTES ON TEN VARIETIES OF THE APPLE SUITABLE FOR THE EXPORT TRADE.

American apple growers long ago learned that comparatively few varieties are suited to the requirements of the commercial orchard. Many of those which are of the highest quality for dessert use are prevented by delicate texture, unattractive color, inferior size, unsuitable season of ripening, or insufficient productiveness from becoming profitable varieties even for domestic markets.

In the export trade the requirements are still more exacting, and but a few of the reputable varieties of our home markets have been found suitable for transatlantic shipment and sale. Of the thousand or more varieties now propagated and for sale by American nurserymen, it is doubtful if more than twenty have been found adapted to the export trade as now conducted.

For the guidance of prospective planters the following notes on ten of the leading export varieties have been prepared:

BALDWIN.

The Baldwin apple, which has been for more than half a century the leading market variety of the New England States, originated as a chance seedling in a lane on the farm of Mr. John Ball, in the town of Wilmington, near Lowell, Mass., and bore its first fruit about the middle of the eighteenth century. For many years after the original tree came into bearing the variety was confined to the immediate neighborhood of its origin. Having attracted the attention of Colonel Baldwin, of Woburn, Mass., it was propagated by him, and was rapidly disseminated throughout the adjoining towns. Before the middle of the present century it had become the leading variety in New England nurseries. At about the same time it became popular in New York and soon after this in Michigan. It was at one time considerably planted farther south, but has been generally discarded as a market variety south of latitude 40° N., where the fruit ripens prematurely and does not keep well. It has not proved successful between the Mississippi River and the Rocky Mountains, but succeeds well in the cooler apple districts of Colorado, Nevada, Utah, Idaho, Washington, Oregon, and California.

The tree is a vigorous grower, with a roundish, upright, rather compact head. It is productive, but it is much inclined to overbear in alternate years and to produce only a light crop in the succeeding years. In recent years it has been found quite susceptible to injury by apple scab, which has materially reduced the yield and value of its fruit in the large commercial orchards of New York and Michigan, where it is now most largely planted.

The fruit is large, roundish-conical, often oblate, and sometimes unequal in form. The cavity is of medium size and depth, and is

usually wavy and russeted; the stem varies from medium to long and is often clubbed at its attachment to the branch. The basin is of medium size, usually deep and ribbed; the eye variable, from small to large in size and from tightly closed to open, as grown in different climates. The surface is smooth, with a rich yellow ground color, which, on the exposed portions of the fruit is covered at maturity with a deep, rich red which is indistinctly striped with darker red. It is often slightly russeted, especially toward the base of the fruit. The dots are small, yellow, often russeted, and they are frequently depressed toward the apex of the fruit. The skin is rather thick and tough; the flesh yellowish-white, rather coarse, breaking and juicy, with a sprightly, subacid flavor, and a slight astringence, which is characteristic of the variety. The core is medium, round, closed, meeting or clasping the eye; seeds long, pointed. The quality varies considerably in the various apple sections, but in the Northern States, where it is now chiefly planted, it is entitled to rank as "good" for dessert and "very good" for culinary use. Its season is from December to March in ordinary cellar storage in the North.

Its special merits as an export variety are its productiveness, bright color, tough skin (which prevents injury from bruising during packing and while in transit), and its excellent keeping quality when grown in the North.

Its most apparent defects are, susceptibility to injury of both foliage and fruit by apple scab and injury of the fruit by "dry rot."

BEN DAVIS.

The origin of this apple, which is now more extensively planted in commercial orchards in the United States than any other variety, is in doubt. Several statements have been published concerning it from time to time, the more credible pointing toward Virginia or Tennessee as its original home. It was widely disseminated through Virginia, Tennessee, Kentucky, southern Ohio, Indiana, and Illinois before 1850, and was brought to the attention of pomologists at about that time by Mr. J. S. Downer, of Todd County, Ky. Though not of high dessert quality, the variety possesses so many valuable characteristics that it has steadily grown in favor among commercial orchardists from Maryland, Virginia, and North Carolina westward. Farther north, in the apple-growing districts where Baldwin and Northern Spy are the leading varieties, Ben Davis is less highly esteemed, as the growing season there is too short to permit the proper maturing of its fruit.

The tree is an upright and vigorous, though somewhat straggling, grower, and is a prolific bearer from an early age.

The fruit is large, varying from roundish oblate to cylindrical truncate in form, and is usually regular. The cavity is deep, acute, and russeted, the stem rather slender and varying from medium to long.

The basin is usually wide and moderately deep, of a peculiar saucer form, which is a strongly marked characteristic of the variety; the eye medium, partially open.

The surface is smooth, often glossy, and is of a rich yellow color, mostly covered with stripes and splashes of light and dark red. The dots are usually small and scattered. The core is of medium size, conical, regular, clasping the eye. The flesh is whitish, breaking, rather tough until fully ripe. The flavor varies from a distinct acid to subacid. In quality the fruit is better adapted to culinary than dessert use. It is specially esteemed for pie making and yields a handsome product when evaporated.

The fruit is easily kept until March in ordinary storage wherever it goes into winter in sound condition, and it stands cold storage and long shipment better than most other varieties.

The toughness of skin and flesh renders the fruit of Ben Davis less liable to injury from bruises than other varieties, so that it rarely becomes "slack" in the barrels unless very carelessly packed and handled.

Though sometimes injured by scab in the North it is rarely injured by this or any other serious disease in the Middle Atlantic and Prairie States, where it is most largely planted. The low dessert quality of the fruit is the chief menace to its future popularity.

JONATHAN.

This apple originated on the farm of Philip Rick, of Woodstock, Ulster County, N. Y. The name Jonathan was applied to it by the late Judge Buel, in honor of Jonathan Hasbrouck, esq., who called his attention to the variety. Judge Buel sent specimens of it to the Massachusetts Horticultural Society in 1829, stating that it was "an Esopus seedling, and sometimes called the New Spitzenberg."

It was rapidly disseminated after this time and was highly praised for its productiveness, beauty, and pleasant flavor in the horticultural periodicals of that time. As a market variety the Jonathan seems to have gained higher repute in the West, where it is now most largely planted, than in New York or New England. It was introduced to southern Iowa as early as 1842 and soon became, as it still continues, a leading market sort. Though rarely attaining large size it is so beautiful in form and color that it continues to gain in popularity where it succeeds, particularly in portions of Michigan, Iowa, Kansas, Colorado, Nevada, Idaho, and in the mountain orchards of the Pacific slope.

Though only an early winter sort, it has been found to keep fairly well in cold storage and to sell readily at high prices in British markets.

The tree is of rather slender growth and spreading, rather drooping, habit. It is productive, bearing heavy crops in alternate years.

It often succeeds better when top grafted on a strong growing stock than as a root-grafted tree.

The fruit is of medium size, varying in form from roundish conical to cylindrical. Both cavity and basin are deep, acute, and regular, the former slightly russeted; the stem slender and of medium length; the eye small and closed. The skin is thin but quite tough, and is very smooth, having a few minute dots. The color is a clear, whitish yellow, so thickly covered with clear red stripes that it often appears to be a dark, solid red, except where shaded by a leaf or twig which discloses the ground color, affording a most beautiful contrast. The core is small to medium in size, roundish, regular, closed, barely clasping the eye, and containing numerous rather large, angular, brown seeds; the flesh is white, often faintly tinged with red; very tender and juicy, with a mild aromatic flavor similar to, but less pronounced than Esopus *Spitzenburgh*, its supposed parent. In quality it is very good.

It is preeminently an apple for dessert use in the fresh state, and by its beauty and convenient size is particularly adapted for sale in small lots from stands and stores for immediate consumption. It is a late autumn or early winter variety except in the more northern districts, and is inclined to wilt and wrinkle in ordinary storage after New Year's, but in cold storage it is successfully held to a much later date.

Because of its tender flesh and thin skin, special care in picking, handling, and packing are imperative in marketing the Jonathan. It is easily bruised, and its market value is materially lessened by careless handling.

NORTHERN SPY.

This popular dessert apple originated in East Bloomfield, Monroe County, N. Y., about the year 1800, from apple seeds taken there from northwestern Connecticut. The original seedling tree was planted in the orchard of Heman Chapin, but died before bearing fruit. Suckers which had been taken from it by Roswell Humphrey and planted in his orchard were the first to bear, and to him, therefore, we owe the preservation and dissemination of the variety. It was not disseminated outside of its original locality until about 1840, when fine specimens of the fruit exhibited at Rochester attracted the attention of nurserymen and cultivators. It was highly commended and largely propagated after this time and soon became widely disseminated. Its fruit is highly esteemed wherever grown, but in the Southern apple districts it has been found to mature too early to be a profitable market sort.

The tree is a vigorous, upright grower, with a compact round head, which requires much thinning out to insure proper ripening of the fruit. The young wood is rather slender and the leaves of medium size. The variety is slow to come into bearing and is inclined to bear heavy crops, alternating with very light ones, after it reaches an age

of 15 or 20 years. The tree is resistant to cold and is esteemed as a stock for grafting feeble varieties upon.

The fruit is large, varying in form from roundish conical to oblate conical, often distinctly angular. The cavity is large, wide, and deep, usually angular, sometimes russeted, and contains a stem of medium length. The basin is small and abrupt, containing the small, closed eye. The surface is very smooth, having a few scattered, small dots, and is yellow, nearly covered with bright, glossy red, splashed and striped with purplish crimson and partially covered with a thin white bloom. The skin is thin but quite tough; the core of medium size, rather open, containing numerous small pointed seeds. The flesh is yellowish, fine grained, breaking juicy, having a sprightly subacid aromatic flavor, highly regarded for the dessert.

In the North the fruit keeps well until late spring in ordinary cellars, but its delicate flavor is quickly destroyed by contact with earth or decayed fruit. It endures cold storage well but is inclined to shrink in the barrels somewhat, necessitating repacking for shipment after being removed from storage.

RHODE ISLAND.

The Rhode Island *Greening*, as it is very generally known, has for nearly a century been held in high esteem as a dessert and culinary apple in the New England and Middle Atlantic States.

It was included in the list of "long-keeping apples" recommended for cultivation by McMahon in 1806,[1] though the earliest description was by Coxe in 1817. The place of its origin is not definitely known, though it has been generally credited to Rhode Island since the days of McMahon and Coxe. Having been widely distributed in the East, it was taken to Marietta, Ohio, from Connecticut in 1796, and soon became popular there for family use. The hotter sun and greater variation in temperature in its new home soon demonstrated that it was only an autumn fruit in the West, however, and it is now but rarely planted in commercial orchards south of Michigan.

As an apple for culinary use it may be said to stand without a rival during its proper season among the sorts now planted in commercial orchards, while it is at the same time of excellent dessert quality. These characteristics have served to partially maintain its market standing in competition with the more brilliant and handsome varieties of recent introduction. It now sells for lower prices than the red varieties both in domestic and foreign markets, however, and in seasons when the apple supply is large meets with little export demand.

The tree is a vigorous grower, with large leaves, stout wood, and spreading habit. It has been found specially adapted to light and sandy soils and cool summer climates, such as are found in portions of New England and New York and in proximity to the Great Lakes.

[1] American Gardener's Calendar, p. 585.

It is regularly and abundantly productive, and, though often injured in quality by apple scab, is less subject to total loss of crop by that disease than most of the Northern winter varieties.

The fruit is large, oblate, somewhat conical, often irregular and unequal; cavity wide and regular, of medium depth, stem medium to long, curved; basin small to medium, regular, shallow, usually thinly russeted; eye small, closed. The surface is somewhat roughened by russet, but possesses an oily or waxy feel when mature; dots irregular, numerous, gray; color green, changing to dark, dull yellow when ripe, sometimes with a bronze blush on the sunny side. The skin is rather thick and quite tough; the core roundish oval, regular, closed, clasping; seeds numerous, angular, dark. The flesh is yellow, breaking, tender, juicy, with a rich, sprightly, subacid flavor, good for dessert and excellent for cooking. Its season of maturity varies according to latitude, from late autumn until midwinter or early spring. It endures handling and transportation well.

ROXBURY.

The apple widely known as Roxbury *Russet* is believed to have originated in Roxbury, Mass., soon after the settlement of the country. Scions of it were taken from there to Stonington, Conn., soon after the settlement of that place in 1649, and it was soon widely planted in eastern Connecticut.[1] Scions of it were taken from the orchard of General Israel Putnam (the wolf killer) in Pomfret, Conn., to the then new settlement at Marietta, where they were grafted in 1796 in the first nursery in Ohio, which had been established by his sons in 1794. From this point the variety became widely distributed under the name *Putnam Russet*, and was for many years considered a distinct variety. Under this name it was considerably grown in Ohio for the markets of New Orleans and the West Indies.[2] It was largely grown for market and exportation in the vicinity of Boston at an early day on account of its productiveness and long-keeping quality.[3] Its reputation as a profitable orchard variety caused it to be widely planted previous to 1870, but since that time it has declined in popularity.

In the more Southern districts it has, like most other sorts of Northern origin, been found to ripen prematurely. In the North it still succeeds, but its dull color and rather inferior flavor have materially lowered its market value. In common with other russet apples of inferior dessert quality, it seems destined to be superseded by more handsome if not better sorts.

The tree is moderately vigorous, of spreading habit, and is very productive.

[1] History of the Massachusetts Horticultural Society, p. 43.

[2] The Fruits and Fruit Trees of America, A. J. Downing, fifth edition, 1845, p. 132.

[3] New American Orchardist, William Kenrick, seventh edition, 1845, p. 80.

The fruit is medium to large, roundish oblate, often angular and oblique. The cavity is of medium size, regular, abrupt but not deep; stem of medium length, rather slender; basin of medium size, round, regular; eye medium, closed. The surface is rather rough, brownish yellow when ripe, with minute light dots, and is usually well covered with russet, though exceedingly variable in this respect, specimens from the Rocky Mountains and Pacific slope being almost entirely free from russet. Occasional specimens show a faint blush on the side exposed to the sun. The skin is moderately thick and tough, the flesh greenish white, rather coarse and granular, and moderately juicy. The core is of medium size, regular, closed, clasping, with numerous angular seeds, many of which are imperfect. In flavor the Roxbury is rather acid for dessert, though excellent for cooking.

TOMPKINS KING.

This apple, which is highly esteemed in the markets both at home and abroad, is of uncertain origin, though the more definite statements concerning it all point toward New Jersey. According to a writer in the Country Gentleman,[1] it originated in the Harrison orchard in Essex County, N. J., from which also came the one-time celebrated Harrison cider apple. From there it was taken in the form of scions in 1806 to Jacksonville, Tompkins County, N. Y., where a single graft set on a tree on the farm of Mr. James Wyckoff survived. Trees grafted from this in 1832 bore a heavy crop in 1838, and attracted such attention in the markets of Ithaca and Elmira that the variety quickly became popular and was rapidly disseminated throughout that vicinity. In 1856 it was stated in a discussion at the Rochester meeting of the American Pomological Society that the "Tompkins County King," as it was then designated, had been in cultivation for fifty years and was a general favorite wherever known, usually bringing double the price that could be obtained for any other sort.[2]

It was not considered sufficiently tested to recommend for general planting at this time, however, but was added to the list of "New varieties which promise well." Shortly before this it had been disseminated westward in an experimental way, and had been described as "King" by Elliott in 1854.[3]

Notwithstanding its large size and beauty, it soon lost popularity in the West and South because of the premature ripening and dropping of its fruit. It is found to succeed admirably in Michigan, northern New York, and New England, however, as well as in the neighboring provinces of Ontario and Nova Scotia, and is now largely exported from most of these localities.

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[1] 1854, p. 234.

[2] Proceedings Am. Pom. Soc. 1856, pp. 173–174.

[3] Western Fruit Book, p. 142.

The tree is a vigorous, spreading grower, with large, stout shoots and leaves. It is moderately productive.

The fruit is large and varies from round to oblate conical, and is usually angular; the cavity is of medium size and depth, usually smooth and free from russet, the stem of medium length, thick, and often clubbed. The basin is of medium size, rather shallow, and usually corrugated; the eye medium, closed. In color the apple is a deep, rich yellow, shaded with red and striped with crimson. The flesh is yellowish, rather coarse, juicy, and tender, with an agreeable, sprightly subacid, aromatic flavor. The skin is rather thick, and but moderately smooth, having numerous gray dots and russet veinings. It is very good in quality both for dessert and culinary use. It ships and keeps well in the North until late winter, but has been discarded in the South and West on account of the early maturing of its fruit, already mentioned.

WINESAP.

The Winesap was described by Coxe in 1817[1] as one of the best cider and eating apples of his region (western New Jersey). No authentic account of its origin has been discovered, but it is supposed to have originated in New Jersey. It became a popular apple through Delaware, Maryland, and Virginia at an early day, and was soon disseminated westward to Tennessee, Kentucky, Arkansas, Missouri, and Kansas. More recently it has been quite largely planted in the Rocky Mountain apple districts and in portions of California.

The tree is moderately vigorous, with a rather open, straggling head. It is an early bearer and is very productive, but is inclined to overbear and go into premature decay in consequence.

The fruit is of medium size, roundish conical, often angular or slightly ribbed. The cavity is large, regular, deep, and slightly russeted, the stem short and usually slender. The basin is of medium size, rather deep and abrupt, usually corrugated; the eye small and closed. The surface is smooth and of a rich, dark yellow color, mostly covered with dark red, sometimes faintly striped and often veined with russet toward the base of the fruit. The dots are rather scarce, and small, indented toward the apex, but distinctly enlongated toward the base.

The skin is moderately thick and is very tough; core medium, conical, clasping, slightly open; seeds few, medium, brown; flesh yellowish, fine grained, firm, breaking; flavor sprightly subacid to distinctly acid; quality good for market, dessert, or culinary use.

The Winesap is an excellent keeper when well handled, being at its best from January to March when grown and stored in Virginia, Tennessee, and Kansas. As commonly grown it is rather under size

[1] A View of the Cultivation of Fruit Trees, etc., pp. 153-154.

for export sale, but the fruit from young trees, which have not been exhausted by overbearing, is large, carries well, and sells at high prices. This is especially true of the choice fruit of this sort from the Piedmont region of Virginia.

Several known or supposed seedlings of Winesap, including Stayman, Paragon, and Arkansas, are of larger size than the parent variety and are considered superior to it in vigor of tree. They may be considered as promising varieties for export which have not yet been sufficiently tested to establish their superiority to the parent in this respect.

YELLOW NEWTOWN.

As has been previously noted (p. 311), the "Newtown Pippin" was the first American apple which attracted attention in Europe. After the receipt of specimens by Franklin while in London in 1759, and the subsequent sending of grafts to Collinson by John Bartram, numerous attempts were made to grow the variety in England. As early as 1768 it was cultivated in the Brompton Park nursery under the name "Newtown Pippin of New York."[1]

It is probable that the large apple exports of 1773 included considerable quantities of the Newtown, for it was at that time quite generally distributed through the apple-growing districts of the Atlantic slope. Thomas Jefferson recorded in his "Garden Book" that in March, 1773, grafts of "Newtown Pippin," received from Mordecai Debnam, at Sandy Point, were "ingrafted by P. Morton," and in March, 1778, he noted that the grafted trees were planted out at Monticello.

Prior to 1803 Forsyth said of the variety in England,[2] "The New-Town Pippin is a fine apple in good season, but seldom ripens with us. It is held in great esteem in America." McMahon[3] in 1806 included Newtown Pippin in his select list of "Long-keeping apples" and also in a list of "Cyder apples."

Previous to 1817 we have no record that more than one type of the Newtown was recognized, but Coxe,[4] whose work appeared in that year, described as distinct varieties the "Large Yellow Newton Pippin" and the "Green Newton Pippin," characterizing the latter as "a variety of the preceding kind." Since the time of Coxe the two types have been recognized as distinct by our leading American pomologists, though fruit growers are by no means unanimous on this point.

The original seedling tree of Newtown Pippin is alleged to have

[1] The Apple and Its Varieties. Robert Hogg, p. 143, London, 1859.

[2] A Treatise on the Culture and Management of Fruit Trees. Edition with American Notes, by William Cobbett, Albany, 1803, p. 58.

[3] The American Gardener's Calendar, Bernard McMahon, p. 585, Philadelphia, 1806.

[4] A View of the Cultivation of Fruit Trees, by William Coxe, esq., pp. 142-143, Philadelphia, 1817.

stood near a swamp on the estate of Gershom Moore, in Newtown, Long Island, until about 1805, when it died from excessive cutting of scions and exhaustion. Its origin is credited to the early part of the eighteenth century. It is not clear at this time whether the original tree was of the "green" or the "yellow" type, nor has any record of a distinct origin of the two been discovered.

The Yellow Newtown has for many years been considered the better apple for exportation, however, and in commercial orchards has almost superseded the Green Newtown on account of its larger size, brighter color, and better keeping quality.

Both sorts are exceedingly variable and susceptible to the influence of soil, climate, elevation above sea level, etc. They are successfully grown in but few portions of the apple-producing area of the United States at the present time, the principal localities being the lower portion of the Hudson River Valley in New York, the Piedmont and mountain regions of Virginia and North Carolina, and portions of California, Oregon, and Washington.

Though first grown in commercial orchards in New York, New Jersey, and Pennsylvania, the excellent quality of the fruit from "some of the Patowmack counties of Virginia" was noted as early as the time of Coxe.[1]

In Albemarle County, Va., where it reached a high degree of perfection, it became known as the "*Albemarle Pippin*" at an early day, and was for many years considered a distinct variety, of local origin, and was so propagated.

An export trade in the fruit from Albemarle County was inaugurated under favorable auspices by a happy circumstance which occurred in the first year of the reign of Queen Victoria. The following account is kindly furnished by Mr. Samuel B. Woods, president of the Virginia Horticultural Society:[2]

> The true history of the matter is that in the first year of Queen Victoria's reign Andrew Stevenson, whose home was on a mountain side in Albemarle, was minister to the Court of St. James. He had Albemarle Pippins sent over for his own use and presented the Queen with several barrels. She was delighted with the perfect flavor and excellence of the fruit, and, as a graceful acknowledgment of the courtesy of Mr. Stevenson, removed from Albemarle Pippins a small tax which then existed for the benefit of the Crown on all imported apples. From this time the Albemarle Pippin has grown steadily in favor in the English markets. It is not unusual to see them selling in the wholesale markets at Liverpool for two or three times the price other American apples are bringing. A neighbor last fall sold his entire crop for $10 per barrel, and Mr. Whately, an English gentleman who recently returned from abroad, told me that he saw Albemarle Pippins retailing at 36 cents a pound.

The identity of Albemarle and Yellow Newtown seems to have been recorded first by the late Franklin Davis in a letter from Staunton, Va., which was published in the Horticulturist in 1857.[3] Since that

[1] View of the Cultivation of Fruit Trees, p. 143.

[2] Letter of April 30, 1898.

[3] Horticulturist, Vol. VII (1857), p. 288.

time most pomologists have accepted their identity, ascribing the slight variations which are observable to local soil or climatic conditions. But in the absence of an authentic record of the introduction of Yellow Newtown to Albemarle County many orchardists in the Piedmont and mountain regions have continued to believe the Albemarle a distinct variety of local origin. Recent investigation by Messrs. H. L. Lyman and Samuel B. Woods, prominent citizens and fruit growers of Charlottesville, Va., have resulted in an apparent clearing up of the historical uncertainty and establishing a clear connection between the supposed original Albemarle tree and the older variety. The following statement has been kindly furnished by Mr. Woods: [1]

As far back as 1765 there was a tree noted for its fine fruit standing in a mountain hollow on what is now Mr. William Sutherland's land, in the North Garden neighborhood. How this tree came here no one knows, but tradition has it that it was a seedling, and from its stock came all Albemarle Pippins.

The other account, and the most authentic one, is that which fixes the earliest introduction at the time of Braddock's defeat. Dr. Thomas Walker, of Castle Hill, Albemarle County, was the commissary officer of the Virginia troops with Braddock, and after the disastrous defeat, when the remnant of the troops went into winter quarters in Philadelphia, he returned home, carrying in his saddlebags cuttings of apple trees. These were grafted at Castle Hill and became the famous Albemarle Pippin.

These two accounts I find connected in this rather curious way: The land on which the tree in the North Garden neighborhood stood was entered in the land office in 1741 in the name of Mildred Meriwether, in whose lifetime parts of the tract were improved. Mildred Meriwether was the stepdaughter of Dr. Thomas Walker, and what is more natural than that the old tree on her land, supposed to be a seedling, was one of the Walker grafts? There is little doubt that the first appearance of the Albemarle Pippin was at Castle Hill from the grafts brought home from Pennsylvania by Dr. Walker after Braddock's defeat in 1755.

The tree is rather slender and of slow growth, becoming large and spreading as it attains age, and is characterized even when young by rough bark. It is slow to begin bearing, but in favorable locations is abundantly productive after it attains an age of fifteen or twenty years.

In the Northern States it has generally been found most successful on rich limestone soils, though the famous "pippins" of Virginia and North Carolina are mostly grown upon the loose, friable, granitic soil of warm mountain coves.

The fruit is medium to large, roundish oblate, conical, sometimes cylindrical truncated and angular, often unequal or oblique; cavity deep, acute, russeted; stem short or medium, often clubbed; basin broad, shallow, or medium in depth, usually furrowed; eye, medium, partially open, the calyx segments becoming dry and brown toward spring; surface smooth, yellowish green, showing a bronze blush toward the apex in highly colored specimens and numerous gray striæ

[1] Letter of April 30, 1898.

toward the base; dots numerous, minute, yellow or brown, some aureole. The skin is rather thick and tough; core small to medium, oval, closed, clasping the eye, seeds large, plump, pointed, brown; flesh yellowish, moderately fine, crisp, breaking, juicy, with a rich, subacid, aromatic flavor. Very good for either dessert or market.

The apple is in season from December to April or May, in most regions where it succeeds, retaining its characteristic flavor much later in the spring than most varieties of high dessert quality.

Notwithstanding the firmness of its flesh and skin, the Yellow Newtown shows bruises very distinctly and requires very careful handling and packing. It is also often injured in appearance by "barrel scald."

The special demand for it is for barrels of bright and perfect specimens. For these very high prices are often realized. Bruised, discolored, or inferior fruit of this kind meets with little demand and often brings less in the markets than a corresponding quality of Baldwin, Ben Davis, York Imperial, or Winesap. Its production is therefore not likely to become profitable except where it can be grown to a high state of perfection and when it is carefully handled.

YORK IMPERIAL.[1]

The variety bearing this name originated early in the present century on a farm adjoining the then borough of York, Pa. The attention of the owner, a Mr. Johnson, was attracted to the tree by the presence of schoolboys who visited it in early spring to get the apples that had passed the winter on the ground, covered by leaves. On securing some of the fruit he found it in fine condition, and when the next crop was ripe took specimens to Mr. Jonathan Jessop, a local nurseryman, who began the propagation of the variety before 1830, under the name "Johnson's Fine Winter." Under this name it was known until after the middle of the century, when, after an inspection of specimens, the late Charles Downing pronounced it the "imperial of keepers" and suggested that it be named "York Imperial." Mr. Jessop did not find ready sale for trees of the variety at first, and dumped the surplus trees from his nursery into a hollow beside the turnpike passing his place. They were picked up by farmers returning from market and taken home for planting on their farms in the lower end of York County. After its merit as a variety for market orchards was established it became widely distributed throughout Pennsylvania, Maryland, and Virginia, and soon became a leading market variety in those States. So far as known, the variety was first described in print by Dr. W. D. Brincklée in 1853.[2]

[1] For the historical statements on the origin and name of this variety the writer is indebted to Prof. S. B. Heiges, late Pomologist of the Department of Agriculture.

[2] Magazine of Horticulture, 1853, p. 210.

Warder states that specimens of it were exhibited at the meeting of the Ohio State Pomological Society in 1855, but it does not seem to have become generally popular west of the Alleghany Mountains until a comparatively recent date. Since about 1880 it has been widely disseminated through the Middle Western States and has become one of the leading market varieties of that region.

The fruit varies from medium to large in size, and is roundish oblate, often oblique, in form. The cavity is usually of medium size, depth, and slope, slightly marked with russet; the stem is commonly short and moderately stout. The basin is regular, deep, and slightly leather cracked; the eye usually small and tightly closed. The surface of the fruit is smooth, light yellow, washed and indistinctly striped with bright red in the sun, overspread with gray and sparingly sprinkled with distinct, large, light dots.

The skin is thin and tough; the core small to medium, open, with numerous seeds; the flesh yellowish, crisp, juicy; the flavor a pleasant, mild, subacid; the quality good to very good.

In season this apple is at its best from November to February in the regions where it is chiefly grown. Its productiveness, uniform size, bright color, and fair quality are its chief merits. The oblique form lessens its value for evaporating, as the difficulty of paring by machines is increased thereby. The fruit is often injured in appearance by "barrel scald" in storage, but the quality is hardly affected by it.

Since 1895 York Imperial has been growing in favor with the export trade, and selected fruit from orchards of the Piedmont region of Virginia has been sold at high prices both in British and German markets.

A distinct strain of this variety is recognized and locally propagated in York County, Pa., where the variety originated. It is of smaller size, is less oblique in form, is of brighter color, and has flesh of finer texture and longer keeping quality than the common type of the variety. The place or time of origin of this strain is yet undetermined.